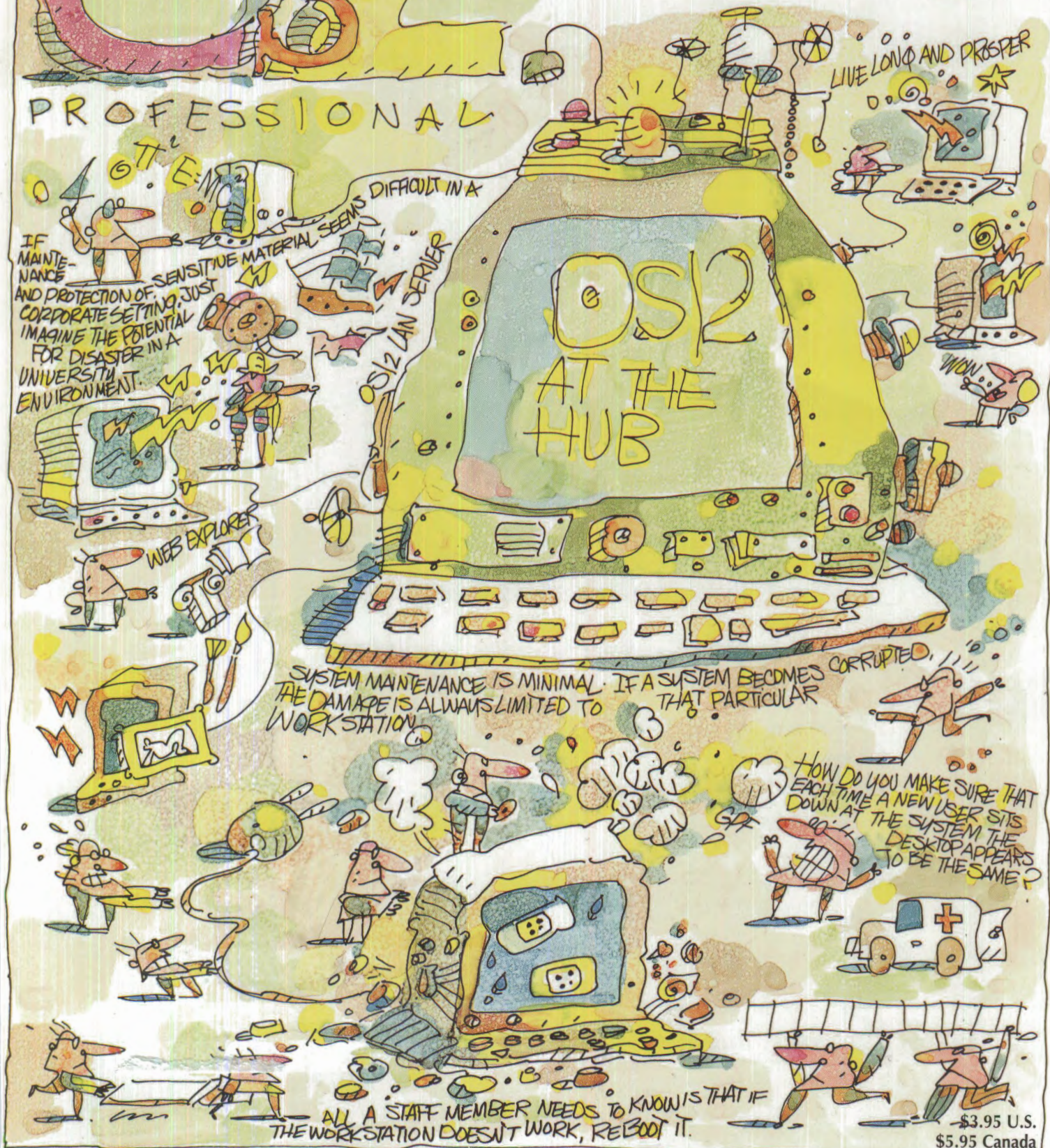
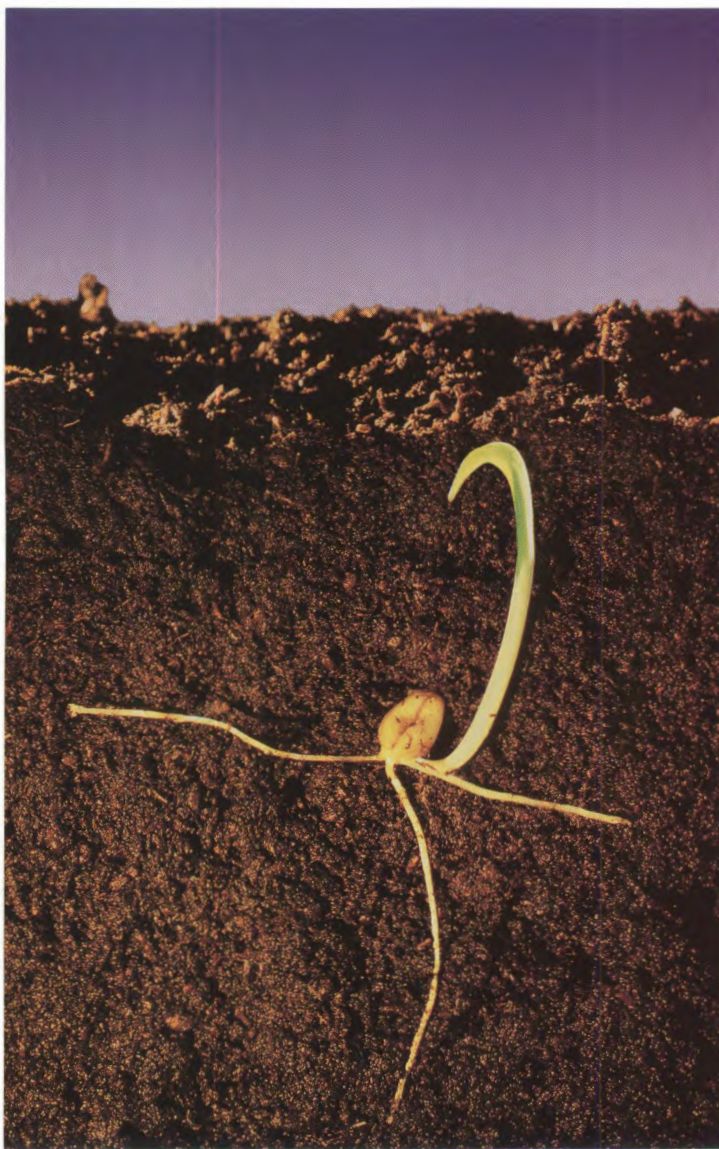


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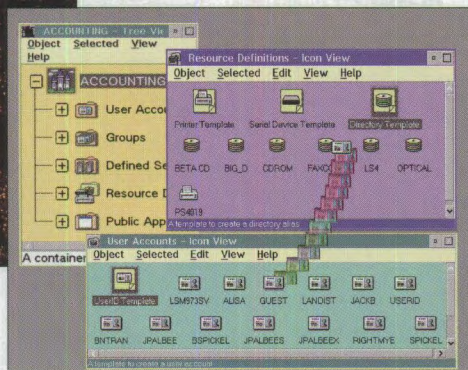


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# The Most Powerful Man in OS/2

**W**ho is the most powerful man in OS/2? My answer used to be Bill Gates. After all, Gates calls the shots. IBM just reacts. But the most powerful position is now held by someone else.

Not John Thompson, not Lee Reiswig, not Dan Lautenbach, not even Wally Casey. The man who can change everything overnight is Stanley Sporkin.

Who?

Federal Judge Stanley Sporkin is the judge who enforces the Justice Department's sweetheart consent decree with Microsoft. Recently, the judge has declared his dissatisfaction with the deal and has made it clear to both sides that the matter is not closed. Nor is Judge Sporkin tiptoeing among the elephants. Making himself unmistakably heard, Judge Sporkin declared that the consent decree seemed so toothless that it might "only apply on snow days." BTW, that's not very often inside the Beltway.

Judge Sporkin says nothing will be final until he hears further comment from the computer industry because right now he is feeling a little snookered. His words: "I don't want to look like a patsy here. I take my job very seriously... if someone is asked to approve something, then that person wants to be sure that what is being approved, there's an adequate basis."

Three computer firms have already filed briefs objecting to the consent decree, but their briefs were ironically filed anonymously through a law firm in California. The firms declared they feared retribution from Microsoft for objecting.

Judge Sporkin doesn't like being a patsy. He has been an enforcement director for the Securities and Exchange Commission and was once general counsel for the Central Intelligence Agency. The judge has read a copy of *Hard Drive*, which delves into the industry's objection to Microsoft's tactics. He isn't impressed with how the consent decree addressed the lopsided world of software marketing Microsoft has created.

Now what could the judge do if he wanted to? Could he unin-

stall Microsoft's incredible lead? Well, remember a company called AT&T? They used to own all the telephones and all the lines and all the connections. One federal judge, Harold Green, presided over the dismantling of the AT&T empire—the biggest corporation in the world—forcing divestiture and the creation of the Baby Bells. Judge Green's order ultimately compelled the phone company to install universal connections in everyone's home or office enabling any vendor to plug in, and offering every citizen the right to choose any of several long distance carriers.

If the same approach were taken by Judge Sporkin, Microsoft

could be compelled to inform the computer world that it really has choices in operating systems, choices that were blocked by its monopolistic conduct. The public would be allowed to do nothing and remain with Microsoft Windows, or switch. Perhaps the OS election would be via a disk that allowed people to call into a central board and download a self-installing operating system, or perhaps it would be some common code that would allow all Windows desktops to function as either Windows or OS/2 desktops.

Perhaps Judge Sporkin could also mandate that all OEMs who have been

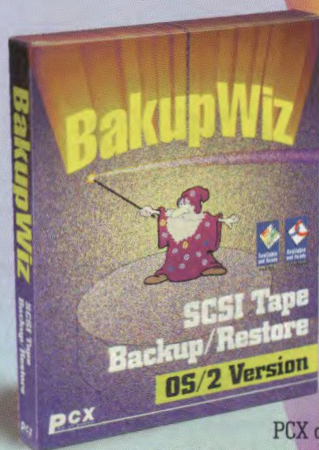
knowingly or unknowingly part of the Microsoft monopoly insert OS options into their computers. Each customer would then be able to select the OS personality he or she prefers. As in long distance carriers, people could switch whenever they wanted to by opting back to the former OS personality. The marketplace's decision would be based on application compatibility and features—just the level playing field everyone wants.

And of course, Judge Sporkin could start by mandating the government to make the switch first. As with the phone company, it would take years to reverse the effects of monopolistic practices. But it could all start with the stroke of a pen held by one man: Judge Stanley Sporkin. He is the most powerful man in OS/2. If he does nothing, the title goes back to Bill Gates.

*Edwin Black*





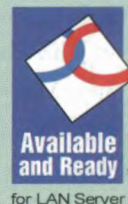


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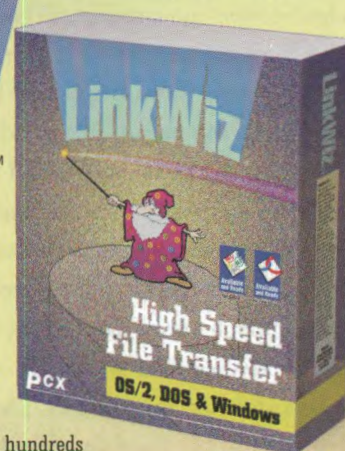
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*Comments, criticisms, and observations*

## Media Meltdown

Recent coverage of Microsoft's Windows 95 and the relative lack of coverage of IBM's OS/2 version 3 Warp have changed my usual reticence about writing letters to the editor.

I continue to see information about a system not due out for over six months and see next to nothing about a viable and potentially superior product that is available now. There are elements within the newest version of OS/2 which make it superior to Windows NT. Claims that there are no applications for OS/2 can be easily countered by the fact that there are even fewer for Windows 95.

Like IBM, Microsoft has an almost perfect record for announcing release dates and then pushing them back months. Just think of the confusion this puts in the mind of the average user. Instead of being encouraged to buy new technology, we are spoon-fed about how great this future release will be, a future release that is continually being revised, having features taken out and being made less appealing. As a result of these wonderful new features and trade magazine coverage of Alpha and early Beta versions, users usually are naive enough to wait. What does this show? That if a company is big enough, it doesn't have to live up to its commitments or be responsive in its delivery of products, and consequently, that trade magazines that rely on their advertising dollars will willingly support this attitude.

A look at past history reveals that Microsoft didn't gain command of the desktop through its superior products. It gained command through the fact that its DOS products were not as good or as popular as other vendors' products. Therefore, they could effectively abandon their DOS products and concentrate on their Windows applications since Windows was seen as an easier way of doing business. Other vendors did not have that luxury.

**David Delaney**  
*via the Internet*

## OS/2: too hip?

My client has changed the specifications for their client product information/ordering system that is to be installed in over 4,000 offices around the globe. They are opting out of OS/2 and choosing Windows NT. They reasoned that "IBM has repositioned OS/2 as a 'hip toy' rather than a professional product. We cannot afford to install systems which compromise [our image as a leading manufacturer] in our clients' offices."

At the time of this announcement, I hadn't seen the *Get Warped* commercials so I wasn't sure what the company was referring to. Now that I've seen two of the commercials, I'm feeling rather ill.

What I remember most about the commercials is the misuse of several computing terms in the first and a collection of "hippies and musicians" (certainly the target audience within the average business or home, no?) in the second. The commercials never even showed a display or explained what Warp is. What is IBM expecting to accomplish with these commercials?

**Brian V. McGroarty**  
*via the Internet*

## Instruction destruction

What a terrible practice. Selling software products without instructions! Yet I just bought two OS/2 applications with no manuals: Deskman/2 and OS2Tree Pro. Each seems feature-rich, but how do I figure out the features without a manual? Online, hypertext emphasizes the trivial ("Choose a file and click on OK") and unfortunately, it usually omits describing the major features of a package, its file formats, and so on. It's impossible to print hypertext in a useful form. Besides, why spend hours at the computer clicking and squinting when you could read a printed manual in the location of your choice?

A similar transgressor is IBM Works, as provided with Warp. What an unpleasant experience, trying to learn a database program with no manual! Finally, it ate all of my data and wouldn't

read the backup. With no real documentation, I just stopped using it.

If small developers find it too expensive to provide printed manuals, let them provide ASCII text files to print. Developers should remember that no one will recommend software they can't figure out how to use.

**Michael H. Pragar**  
*via CompuServe*

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*The OS2Tree product ships with a small tutorial manual to help the beginner user. We have found that additional documentation only confuses the new user. In the new versions, 2.0 and 2.0A, the entire help is available online and printable (about 30 ascii files all with the extension \*.blp). We also have a detailed technical document called OS2TDEF.DOC that is also ASCII. We encourage our users to fax us questions, problem reports and product enhancement suggestions or to call the Help Desk. In addition, we are installing a*

*continued on page 32*



# Rather Fly Than Walk?

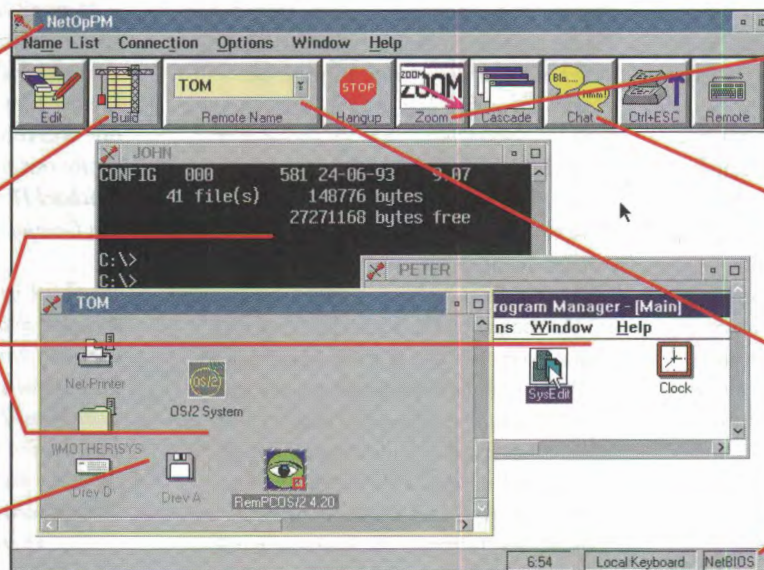
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# BYTES & PIECES

*News and trivialities, important and obscure*

## IBM begins testing of OS/2 for PowerPC

Marking the start of its OS/2 for the PowerPC beta program, IBM is distributing operating systems and development kits to 150 select software vendors and corporate developers. The beta will include OS/2 Warp plus a complete application development environment.

At press time, however, more than half of the developers that were supposed to receive the beta still hadn't received it yet. When questioned about the delay, IBM responded, "The reason they haven't received the beta yet isn't because we're not ready—the developers haven't completed the necessary paperwork. We're 100 percent ready."

While IBM told *OS/2 Professional* that OS/2 for the PowerPC won't be commercially available until mid-'95, Big Blue wants to get the porting process started as early as possible. The confidential beta is designed to give developers a head start in migrating their 32 bit Intel applications to the PowerPC platform and allow them to begin developing new applications that exploit the RISC architecture.

"This platform's success," says John Schwarz, vice president, development, IBM Personal Systems, "depends on building a critical mass of exciting applications that run on it. With this program, we intend to show how easy it is to build applications from the ground up that exploit the combined power of RISC hardware and software."

Several vendors were on hand at COMDEX/Fall '94 to illustrate their success in porting applications to OS/2 for the PowerPC. David Pollak, president, Athena Design commented, "We have spent time doing the Mesa port

and everything IBM says about OS/2 for the PowerPC being a simple recompile is true. If you develop for OS/2 Warp today, your investment will be protected when it's time to move on to the PowerPC."

With OS/2 for the PowerPC, developers can use a single source code for Intel and RISC, allowing them to efficiently maintain and update both versions of their applications.

## Thanks for the memory



At about \$50-\$75 per mb, throwing away old memory isn't as cost effective as cleaning out your photo album and tossing meaningless pictures.

When upgrading a motherboard or a complete system, it makes good sense to move memory over from one system to the other. Unfortunately, it's not always possible because of the way it's packaged for use.

Autotime, a company in Portland, Oregon, has found a solution to this problem. It has designed a series of conversion products to transmute older memory packages into different formats. Upgrading your existing memory through the same techniques used by SIMM manufacturers, Autotime is able to turn out a product virtually indistinguishable from the original at a fraction of the cost. They can turn four 1mb SIMMs into a 4mb 72 pin SIMM for about \$50.



## The kids are all right

When orders for Clear & Simple's products got too large for the packaging department to keep up with,

Tony Periera of Clear & Simple had to look elsewhere for packaging help. His overwhelmed packaging staff at the time consisted of only himself, his five kids, and a shrink-wrap machine. As orders started coming in from major software retail chains for thousands of units, Periera knew it was time for expansion. "We probably did the first 10,000 packages by ourselves, but when CompUSA needs 2,000 copies in one shipment, it gets a little difficult to keep up," Periera told *OS/2 Professional*.

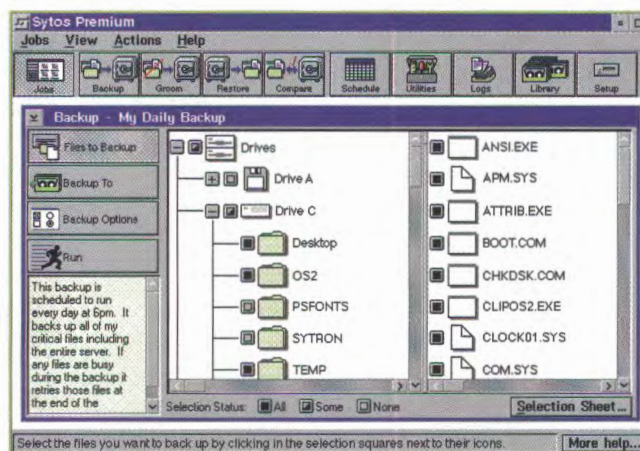
Looking outside his home for packaging help, Periera was not having any luck. Then he talked to his friend Mitch Uzwack, Campus Director at the Lake Grove School on Long Island. The Lake Grove School is a boarding school for physically and mentally disabled children. Uzwack suggested that Clear & Simple give the kids at the school a chance as their collective resume includes experience with shrink-wrapping baseball cards.

After considering his other options, Periera decided to go with the kids. "To date they've done over 10,000 packages. Now I have the product delivered right to the school," he says. He pays the school what he would have paid other packagers in the marketplace. "It's a good win-win situation," says Periera, "I think it's important to contribute back to the community. It's a neat thing because after the kids see the shrink-wrapped boxes they get real excited about what they're doing." ♦





# WE'VE JUST CHANGED THE FACE OF OS/2 BACKUP.

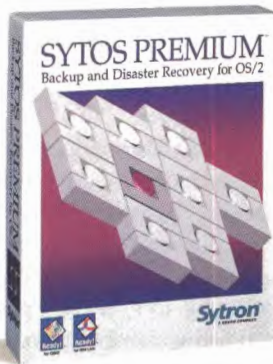


The standard in OS/2® backup just got a facelift. Introducing Sytos Premium™ Backup and Disaster Recovery for OS/2 from Sytron. It's the same reliable Sytos Plus you know and love, and a lot more.

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event scheduler so you can schedule automated jobs to run whenever you like. And the broadest support for industry standard QIC and DAT tape drives. There's even optional built-in autoloader support. The result? Simply the fastest, easiest to use and most flexible backup and disaster recovery solution for LAN Server networks.

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# Warp Relieves a Taxing Burden

BY BRADLEY D. KIEWER

**A**s I write this, 1994 is rolling to a close. With it comes the end of another fiscal year and the frenzy of tax preparation. It also reminds me of Warp's importance as an integrating environment because my accounting and tax preparation applications crossed three operating system lines: OS/2, DOS, and Windows.

On the corporate side, the software environment included BusinessTax for DOS from Intuit/TurboTax which prepares the tax returns, BusinessTax/Tax Depreciation which manages corporate assets and prepares depreciation and amortization schedules, and CA-Simply Accounting for OS/2. Because my companies were organized as S Corporations, I also opened personal accounting applications while I prepared the corporate returns. For personal software, I used Intuit's flagship products: Quicken for Windows, TurboTax for DOS (1993 taxes), and TurboTax for Windows (1994 taxes).

Having all of the applications open simultaneously saved significant preparation time. I could view depreciation results in one DOS Window, watch the tax effects of various write-offs on the corporate returns in another DOS Window, and feed the results to the personal tax results in the WIN-OS/2 session. After finalizing the deductions, I entered the depreciation in CA-Simply Accounting. Of course, throughout the process, I browsed through all six applications to reconcile various transaction and deduction categories.

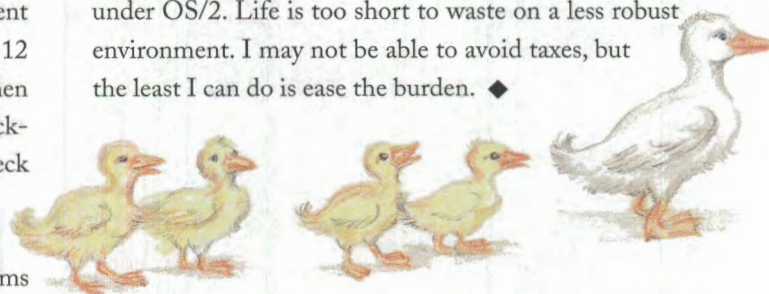
Despite tax returns that have become increasingly more complex throughout the last 10 years, preparing this year's returns was much simpler—not because the software had improved (it had, but not that dramatically), but because the operating environment is more productive. Before OS/2, my desk was covered with 12 months worth of journals and ledgers at tax time. Last year (when my personal accounts were still on paper), I had only my checkbook ledgers, W-2s, and 1099s on the desk. This year, the check ledgers were kept in an electronic checkbook (the Panasonic CPA) and transferred into Quicken and the only papers on my desk were the sticky notes reminding me to verify certain items

at a later time. I'm still waiting for the W-2s and 1099s, but they won't stay on the desk any longer than it takes to verify the amounts against the electronic return.

For the first time ever, I had spare time on my hands after completing the initial preparation, thus giving me a chance to review the process and try some alternatives. Normally, my tax preparation efforts suffer from the baby duck syndrome. I first used TurboTax about ten years ago. The annual upgrades were reasonably priced and the software encouraged year-to-year loyalty by transferring carry-over information. The bold step this year was switching from TurboTax for DOS to TurboTax for Windows—a very disorienting change because the interface was quite different. But I wondered, should I have switched to a native OS/2 version?

BT&T Consumer Technology already had announced a “free” (shipping and handling charge only) copy of TaxDollars, so I gave it a try. As I expected, TaxDollars had fewer features than TurboTax. I preferred the font and color schemes used by TaxDollars—it was easier to read than TurboTax. Both were planning versions rather than final product. Both had the forms and schedules I required. However, TaxDollars lacked some of the helpful worksheets and other “extras” available through TurboTax such as the quirky, but useful, cross reference feature. Overall, TaxDollars required slightly more summarization and manual intervention on my part.

I'll stick with TurboTax for the final version. With the pending purchase of Intuit by Microsoft, who knows what the next year will bring. Whatever system I choose, it had better run under OS/2. Life is too short to waste on a less robust environment. I may not be able to avoid taxes, but the least I can do is ease the burden. ♦





A man with dark, wavy hair, wearing a dark blue suit, white shirt, and a patterned tie, is smiling and clapping his hands. In the background, a red sports car is visible, slightly out of focus.

**MAZDA'S I.S. CHIEF**

**CAN'T WAIT TO**

**GET WARPED.**

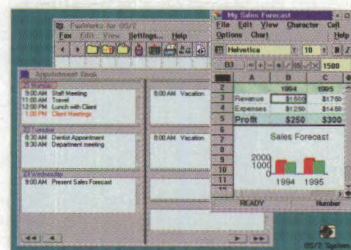




OS/2 is in its third rev, so it's solid, stable, and mature.

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As Mike puts it: "We use OS/2 on our headquarters' client/server systems. It's also installed in

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proven reliability, OS/2 Warp is a total computing solution that performs ruggedly at every level.

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OS/2 Warp also offers Mike Anzis rock-solid reliability. "I know from years of experience with OS/2, I can trust it to keep performing. Now I can enjoy this peace of mind at every level."

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OS/2 Warp is available from your software dealer. It's also available from IBM for \$89 by calling 1 800 3 IBM-OS2.

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BY C. MARC WAGNER





# TO COLLEGE

In the real world, people work in large open offices or share computers because of limited budgets or specialized environments. This is especially true of our site, the Bloomington campus of Indiana University. Our goal is to uniformly deliver reliable and cost-effective 24-hour workstation access to a most challenging computing environment: the IU student body and faculty. We operate in academia. But our task is in many ways similar to the challenge facing corporate IS departments everywhere: how to keep publically accessible systems running smoothly and securely, thus preventing excessive maintenance costs and protecting corporate interests.

That's where OS/2 comes in. When configuring so-called public access systems, a consistent user interface and desktop layout running in a robust operating environment are the primary keys to success. The reliability and compatibility of OS/2 provide significant benefits particularly when the system at hand is profoundly cross-platform.

## The OS/2 Promise

Truth: we live in a world full of Windows. As such, IBM's early claims that OS/2 is "a better Windows than Windows" was viewed by many with skepticism. Just what makes a better Windows? Answer: speed, compatibility, operational enhancements.

Few would argue that OS/2 offers better Windows performance, except in a few select cases. Indeed OS/2 usually imposes a very slight penalty on Windows performance. But Windows can be fragile, given sufficient operational improvements and compatibility, a non-Windows solution such as OS/2 makes an attractive alternative.

Operational enhancements such as uniform workstation access to centralized resources (particularly file servers and printers) play an important role in the corporate environment. However, universal access to corporate resources cannot come at the expense of too much overhead. Con-

trolling corporate costs in maintaining such facilities and services means keeping hardware and software operational by minimally trained staff. Downtime must be kept to a minimum and facilities must be invulnerable to the malicious as well as the curious. Most importantly, sensitive materials—whether licensed programs or corporate data—must be invulnerable to unauthorized access, sabotage, or inadvertent corruption.

If maintenance and protection of sensitive material seems difficult in a corporate setting, just imagine the potential for disaster in a university environment. Fortunately, OS/2 proved more than equal to the challenge and was able to provide a superior platform for operating such facilities.

Like any typical corporate environment, LAN connected DOS and Windows machines are firmly entrenched at IU. Our original plan to implement a Windows multitasking solution fell far short of expectations. Under Windows, the dreaded "General Protection Fault" prevents the PCF (Public Computing Facilities) from offering a purely GUI-based environment. Instead, heavy reliance on DOS-based menus remains the rule.

The 16 bit operating environments of the 1980s simply were not robust enough to meet growing user demands for ever more power-hungry software. As users' needs for multitasking, robust networking, and access to remote resources increased, systems became more vulnerable to the GPF and the increasingly apparent flaws of cooperative multitasking.

## The Making of a System

In late 1993, an evaluation team convened to determine the viability of OS/2 as a DOS/Windows replacement, one which would not require significant changes to the Workstation LAN Model. From a cost/benefits perspective, it was essential that the OS/2 workstations deliver a higher level of overall price/performance than might be expected from DOS/Windows workstations. The OS/2 workstation also had to offer the flexibility to migrate to higher performance native applications wherever possible. A pilot implementation plan was up and running within a year.



## SPECIAL REPORT

### The Scenario

While IU already held Microsoft Windows licenses for all of its workstations, OS/2 for Windows was not considered a viable alternative due to the significant performance gains realized with the full version of OS/2 when running Windows applications.

The NetWare Requester for OS/2, though not yet a mature product, was able to address IU's critical networking needs. It also proved to be compatible with the "license manager" software PCF uses to monitor licensing compliance throughout the PCF sites.

While much of the public has just begun to discover the Information Superhighway, university users have been "surfing the 'net" for years. Even in the pre-Warp era, TCP/IP, the communications backbone of the net was a core requirement for IU. Fortunately, IBM provided a solution via its TCP/IP for OS/2 product. To permit both TCP/IP and IPX to utilize each system's Ethernet card simultaneously, we used the ODI2NDIS for OS/2 software supplied with the IBM's TCP/IP.

### Workstation LAN

The problem that remained, then, was getting OS/2 up and running on a reasonably secure workstation. In a DOS environment, diskless workstations present a viable option. But OS/2 and Windows, with their multi-megabyte DLLs and virtual memory swap files, would add a significant load to an already busy network. Aside from the technical problems encountered with remote booting, providing local rather than centralized scratch space greatly reduces a site's vulnerability to data corruption through carelessness, malicious behavior, or viral infection. In short, under no circumstances should system or data corruption spread beyond a single point of failure—an individual workstation.

Under the IU Workstation LAN model, the workstation has only enough resident software to boot up and make the necessary connections to login to a generic account on the appropriate, centrally located, NetWare server. The login script of the server then provides the necessary mappings and environmental variables for the workstation to gain access to the appropriate applications.

IF THE  
WORKSTATION  
DOESN'T WORK,  
REBOOT IT. IF IT STILL  
DOESN'T WORK,  
REBUILD IT. IF IT'S A  
HARDWARE PROBLEM,  
REMOVE THE  
COMPUTER AND SEND  
IT IN FOR REPAIR.

The IU model further protects system integrity by copying writeable data files to the local drive prior to invoking an application. Of course, before the application accesses its data the system must assure that IU is living up to its licensing agreements, a task managed by a NetWare Loadable Module (NLM) such as SiteLock, or through a client-based "license manager" such as Key-Server.

Users wishing to retain data can transport it from the site via diskette. Those users with access to personal disk capacity on a NetWare server within another part of the IU network may instead attach to that server for personal data storage. Because diskette access presents a potential integrity loophole, workstations boot with virus detection

software in place to help prevent the spread of infected software from a user's diskette.

System Maintenance under the Workstation LAN Model is minimal. In the event a system becomes corrupted, damage is always limited to that particular workstation. The damage falls into three distinct categories: software failure (e.g., a Windows GPF), data corruption (e.g., an undetected virus, a user attempting to sabotage the system), or hardware failure.

The recovery process is quite simple. When a workstation problem is detected, a staff member first reboots the system. If the problem still exists, the troubleshooter rebuilds the workstation using a set of rebuild diskettes. Because data on the local system remains transitory, we need not worry about overwriting critical data.

The rebuild diskettes boot up the corrupted system and login to a maintenance account, which then starts the rebuild process. From the server, the process reformats the local hard drive to ensure the removal of any virus-infested software from the system. It then reloads the operating system, and finally, transfers any other mandatory files to the local workstation. Upon completion of this process, the workstation reboots and returns to service.

In short, all a staff member needs to know is that if the workstation doesn't work, reboot it. If it still doesn't work, rebuild it. If



## SPECIAL REPORT

the rebuild has no effect, then the system must have a hardware problem. If it's a hardware problem, the staff member removes the computer from the site and sends it in for repair. There is no need to send highly trained personnel out to the site to determine the nature of the problem.

The rebuild process generally takes about 30 minutes to complete, including reformatting the local hard drive and performing the system installation and configuration. Certainly, copying all of the major OS/2 system components (about 80mb, including WIN-OS/2 code) to specific directories on the boot drive accounts for a substantial portion of this time.

To reduce this dependence on the local hard drive, we considered OS/2 LAN Server software as an alternative to the classical Workstation LAN Model (using Remote IPL, or RIPL). However, a RIPL implementation would have required the PCF to place the LAN Server at each site since Remote IPL will not function across subnets. Due to the campus-wide nature of the operation, locating a server at a remote site was not considered acceptable. Nevertheless, it is expected that by refining the OS/2 Workstation LAN Model the dependence on local disk space will be further reduced.

### The Specifics

In normal operation, each time the local workstation reboots OS/2, the server initiates a series of actions that ensure the integrity of the local system. First, a BOOTP request (via an OS/2 script called from CONFIG.SYS) to a system-wide UNIX server lets the workstation determine its IP number for TCP/IP services. Next, to ensure that a careless (or malicious) user has not corrupted the system configuration, the server transmits new OS2.INI and OS2SYS.INI to the workstation. The system then resets local file attributes to hide critical files from the casual observer. Finally, the workstation runs a batch process that applies interim upgrades, which may be required to support enhancements added to the site since the workstation was last rebuilt.

With the preliminaries properly dispensed, the workstation launches the OS/2 Workplace Shell and scans the Startup folder. The first process started is one that captures server accessible printers and makes them available to OS/2. Then the CONFIG.SYS file itself is copied down from the server. This step helps ensure that the user cannot easily sabotage the system by replacing the CONFIG.SYS file.

Our original decision to abandon a purely Windows solution was based on the instabilities inherent in the Windows environment. In our environment, "better Windows than Windows" meant better stability. OS/2 offers two options for running Windows programs: either as separate WIN-OS/2 sessions (necessary for pre-emptive multitasking), or as individual applications running within a single WIN-OS/2 session.

Our initial assumption was that separate sessions would provide the stability we required. Nevertheless, we discovered that as a protected mode application, WIN-OS/2 was rock-solid when running Windows applications side-by-side within a single session. As such, OS/2 dramatically improved the stability of most Windows applications without incurring the additional overhead required for separate WIN-OS/2 sessions. Using this approach, the Windows GPF has virtually been eliminated and an OS/2 system lockup due to badly behaved Windows applications has never been experienced.

### Model of Success

This model has been very successful. Currently, the PCF manages in excess of 1,000 individual DOS/Windows and Macintosh workstations across the Bloomington campus and does so with a maintenance staff of only five. Another five staff members, making up the PCF Technical Group, are assigned to the development of new PCF site services.





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OS/2™ is a great operating system - except when it comes to delivering a consistent desktop time after time. It's so easy to drag and drop system files and utilities into the shredder. Anyone can do it. Now that's an administrative nightmare - unless you have the **Desktop Observatory™** from Pinnacle Technology. The Desktop Observatory silently takes control of your user desktops.

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## SPECIAL REPORT

### Further Interface Enhancements

Given the flexibility of OS/2 to permit the user to alter the desktop, a key issue was how to make sure that each time a new user sat down at a system the desktop would appear to be the same.

In the DOS/Windows sites, this was simply a matter of copying all pertinent \*.INI files down to the local drive each time Windows was launched. Under OS/2, however, this would mean rebooting the system each time a new user sat down at the workstation. This clearly was not a practical choice!

To address these concerns, IU is currently working closely with Pinnacle Technology to incorporate Desktop Observatory into the site.

On the WIN-OS/2 side, WordPerfect for Windows offers a set of OS/2 Migration Tools that includes an application called QuickLaunch, which has been implemented into IU's standard environment at startup. It serves to integrate WordPerfect for Windows more fully into the OS/2 environment, and it also greatly reduces the time needed to load and launch all other Windows applications.

Windows applications continue to dominate our environment although IU is already working to replace those Windows applications that have fully compatible OS/2 counterparts.

### Implementation Costs

The costs of implementation of this OS/2 site were not insignificant. Nor were they prohibitive.

Workstation costs were identical had a new Windows-only site been implemented utilizing the existing minimum standard for new workstations (486DX-33, 16mb RAM, 240mb hard drive, and accelerated SVGA.) The same was true for software costs. OS/2 is priced competitively with DOS plus Windows, and OS/2 applications fall into the same price range as their Windows counterparts.

User training costs for the new site were non-existent since Windows users don't need to learn anything new in order to use applications under OS/2. All other costs associated with the new OS/2 site were considered one-time only costs.

Having invested some 4,000 man-hours during the last four years developing and refining the Workstation LAN Model, we had a mature framework from which to work. Utilizing person-

nel possessing a high level of Windows expertise, implementing OS/2 in the new site instead of Windows took an additional 500 man-hours over the last six months. Over the next 18 months, it is anticipated that we may incur another 1,500 man-hours in refining this new variation on the Workstation LAN Model. Considering the one-time nature of this man-power investment, it was most reasonable.

IN THE FEW WEEKS SINCE THE SITE HAS BEEN OPENED, IU HAS ALREADY REALIZED MAJOR BENEFITS FROM THE OS/2 SITE. EVEN GREATER BENEFITS ARE ANTICIPATED AND WE HAVEN'T EXPERIENCED ANY DOWNTIME ASSOCIATED WITH CORRUPTION OF THE LOCAL SYSTEM.

To gain the most exposure to faculty and students in the shortest possible time, IU's largest classroom building was selected for this new site. In the few weeks since the site has been opened, IU has already realized major benefits from the OS/2 site. Even greater benefits are anticipated and we haven't experienced any downtime associated with corruption of the local system. No GPFs have been reported at the site either.

We anxiously await the opportunity to examine the Fullpack version of OS/2 Warp as we expect that the promised performance gains will make OS/2 an unbeatable computing platform for students, faculty, and staff at IU for the foreseeable future! ♦

*C. Marc Wagner is a Unix Systems Specialist at Indiana University. Those wishing further information regarding IU's experience with OS/2 in a public environment may contact Phil Williams, the PCF workstation specialist responsible for the OS/2 site, via the Internet at [pdwillia@ucs.indiana.edu](mailto:pdwillia@ucs.indiana.edu), or Robert Jesseman, the Manager of IU's Public Computing Facilities at UCS, via the Internet at [rjessema@ucs.indiana.edu](mailto:rjessema@ucs.indiana.edu). They both may be reached by telephone at (812) 855-9255.*



# OS/2 VENDOR

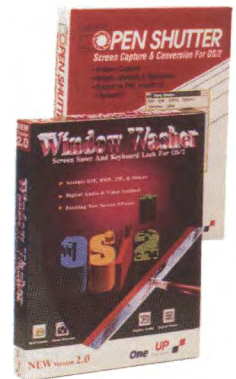


## ◆ Performance Plus Version 3 by Clear & Simple, Inc.

Performance Plus, Version 3, a tuning and utility kit for OS/2 Warp and 2.1, is simple enough for an end-user yet powerful enough for a techie! A new simple interface (GUI) and fine tunes your system with context sensitive help that "teaches while you tune." Includes a DOS/Win application optimizer and numerous other new features. Comes with extra diskette filled with spectacular OS/2 bitmaps.

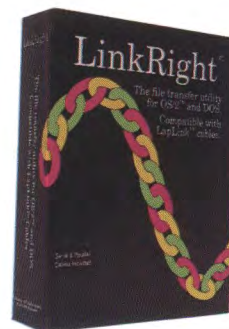
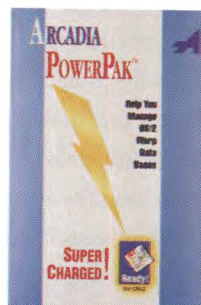
## ◆ Window Washer & Open Shutter by One Up

Window Washer is a screen saver for OS/2 which provides password protection and Full Screen keyboard monitoring. Version 2.0 features many exciting effects, digital audio and video. Open Shutter is a screen capture utility that allows users to capture desktop images, modify, then output to a printer, clipboard or a variety of file formats.



## ◆ PowerPak by Arcadia Technologies, Inc.

The PowerPak is an indispensable add-on tool for your IBM Works suite. It creates programs for maintaining Works databases and schedules them according to your requirements. Ask your dealers for special bundle price (only \$15!) with Warp upgrade.



## ◆ LinkRight by Rightware

LinkRight is a parallel port and serial port file transfer utility made especially for OS/2. The package includes a PM version, an OS/2 command line version, and a DOS version. Maintain EA's and long file names. Supports HPFS and FAT files. CRC checking to insure accurate transfers. Compatible with LapLink cables.

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MARKET FOR OS/2  
AND RELATED PRODUCTS.”



# COUNCIL



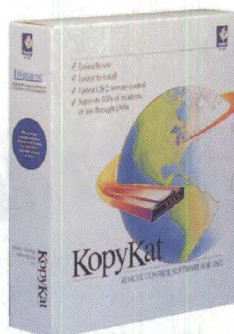
**Available  
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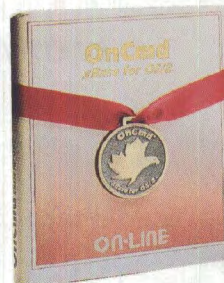
## **KopyKat by Hilgraeve**

KopyKat is a graphical OS/2 remote control solution. You can display the entire desktop of a remote OS/2 system in a window on your OS/2 system. Do anything remotely, that you can do locally. KopyKat supports 200+ modems by name and any Netbios compatible network.



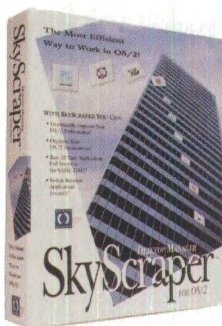
## **OnCmd xBase for OS/2 by On-Line Data**

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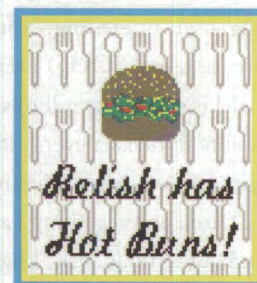
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## ANALYSIS

# WHAT WENT WRONG WITH THE

# Warp Campaign

BY EDWIN BLACK

The Warp Campaign did not go well. And it's time to stop making excuses and fix the problem.

True, more Americans today have certainly heard of Warp as a result of a massive advertising campaign. People stop me all the time now telling me they have seen commercials for "OS/2, that thing you work with." Then they ask, "So what is it exactly?"

True, more than 800,000 copies worldwide have been purchased since early November. But no one really knows how many of those copies and licenses are new users converted from Windows or DOS, old OS/2 users adding Warped stations, or Ferengi users upgrading. Nor does anyone know how many are corporate users, SOHO users, personal users, or IBM employees. IBM is spending millions to market Warp, but can't measure the results. It doesn't even yet have a means of databasing registered user cards to cross-reference against previous registrants.

Based on everything I and my colleagues know about OS/2 on an hour to hour basis, I figure there are only 3-4 million desktops and/or users at most booting up at any time. That includes a half million or so Ferengi licensees. So 800,000 becomes a realistic number, especially when contrasted against the 20-30 million expected upgrades when Windows 95 hits the market, now 60 million strong and zooming.

This much we do know: IBM stockholders and the OS/2 community did not get \$25 million worth of bang from the Warp campaign. OS/2 did not make a dent in the Windows market. PSP is again busy doing what it does best—making excuses. Meanwhile, Louis Gerstner is not happy with the continuous drain on Big Blue's resources. He will soon be doing what he does best. If he reads this article, he may do it even better and even faster.

Here's what PSP did wrong, and here's how IBM can fix it.

## Wrong Goal

OS/2 will never numerically compete with Windows. Never. Let me put it another way. Never, never, never. Nor will OS/2 surpass the installed base of DOS. Ironically, Austin accepts that.

No one—not the FTC, nor Ogilvy & Mather, nor PSP can uninstall the historical head start Windows has. That is no one except federal judge Stanley Sporkin, who presided over the consent decree. Ironically, Sporkin has recently informed both Microsoft and the Justice Department that he feels like maybe the consent decree is a meaningless remedy. In fact, he said it is constructed so vaguely, it might apply only "on snow days." However, unless the judge commands every OEM to preload OS/2, the historical fact remains unaltered.

In essence, Windows is the 747 and everything else is a Learjet. Windows can screw up, crash, lie about its updates, and print lousy T-shirts, and millions more people will still use it and grumble without even thinking about OS/2.

IBM should recognize what OS/2 is and can be: a superior boutique OS that dramatically improves the performance of the two dominant OSs, DOS and Windows. And, of course, OS/2 conveys special advantages to native users, especially to the power user and mission critical worksites. Apple cultivated a prosperous and zealous installed base of less than 8 million, and OS/2 will soon surpass that. Warp should again be repackaged as a "better DOS than DOS" and a "better Windows than Windows." But this time, mean it.

More specifically, for DOS users Warp should be positioned as the logical upgrade that will permit DOS program multitasking—simultaneous printing, word processing, telecommunications, and databasing. IBM's refusal to market to this dream segment is astonishing. Apparently, it is too simple a concept and too



## ANALYSIS

easy a campaign for Austin to undertake. This alone is grounds for mass terminations in Texas.

For Windows users, Warp should be positioned as the tool that empowers Windows: 32 bit computing, preemptive multitasking, fast as lightning. A sample ad campaign saying as much was put together overnight by OS/2 Express and appeared on the inside front cover of the January issue of *OS/2 Professional*.

IBM should never position Warp as an "either-or" proposition against Windows. They'll lose. Nobody wants to trade in their computers, their applications, and their years of computing judgment to something called Warp. Instead, IBM should encourage the world to buy Warp right along with their Windows—as a sort of must-have companion. Let me say that again because it may be the most important sentence in this article: every time a Windows users boots up or buys a box of Windows, he should buy Warp to maximize his computing. Warp makes Windows a *pleasure*... that's the message. The more people who buy Windows, the better. Just buy Warp with it.

Barking at the wind about delays in Chicago constitutes the biggest waste of corporate dollars in the history of the United States. It is a loser strategy based not on genuine market needs or understanding but personal mindsets in Austin that do not think like the people they are trying to market to and never will. For most people, delays in Chicago are not a reason to buy Warp. The benefits of OS/2 are the reason.

### Right Product, Wrong Market

Austin targeted the SOHO market (Small Office/Home Market) because

they read all those studies predicting massive growth in personal computing. That was IBM's second big mistake. It's true, computer manufacturers and many software packages experienced as much as a 32 percent increase during the Christmas holiday from gift givers and home buyers. As many as 5.8 million computers were purchased last Q4. And thousands of copies of Warp were purchased.

Surprise. The long, unhappy lines of befuddled users confounded by hardware and software alike completely overwhelmed everyone from Compaq to CompUSA. After the holidays, support calls to many vendors and retailers were up 50-60 percent over the same period the year before.

These people want their computers and their software to work

as easily as their VCRs and toasters. They don't want to hear about compatibility problems between their stereo receiver, speakers, TV, VCR, and CD-player, and tape decks. They want plug and play—literally. Nobody wants more than a 15-minute set up for their TV. And nobody wants to configure sound cards and IRQs and config.sys'es on home computers.

Making Warp "much easier" to install isn't the answer for the home and home office market. Apple, Dell, Microsoft, Compaq, and even the IBM PC Company all know that. IBM's Aptiva is a perfect home machine (and of course it won't preload Warp until later this year). But let's face it: it took columnist Jerry Pournelle weeks to Warp his machine. It took *OS/2 Professional* Editor Alan Kay a full day, and he had the support of *OS/2 Professional* Editor Bradley Kliever. Warp takes the type of support business is accustomed to. Preloading is the only viable strategy for reaching the SOHO market.

Until mass preloading, the correct market strategy for Warp is to migrate down the corporate user pyramid. I'm not just saying this because *OS/2 Professional* is fundamentally a corporate OS/2 publication. I'm saying it because OS/2 is fundamentally a mission critical corporate product that when properly supported heightens the power, ability, and productivity of companies and employees. It is not a Game Boy. IBM marketing now needs to convince the corporate world to migrate millions of worksites to Warp because of its new and improved flavor.

The SOHO market is approachable by appealing to the need of small offices and home offices to maximize their limited manpower, hardware, and cash. Warp puts money in any SOHO user's pocket. But IBM never made that point in its SOHO campaign. Instead, they are trying to convince people to entrust their huge corporations and small businesses to what appears to be a game product.

### Ineffective Advertising

The solution to a product that is struggling for name recognition and market identity is not an ambiguous advertising campaign. True, volume itself will yield results. But few believe IBM received its money's worth from a saturation ad campaign that never made clear whether Warp was an operating system, a monitor, Internet software, or a funky new computer.

Sadly, the campaign never had a chance. It is exactly as we





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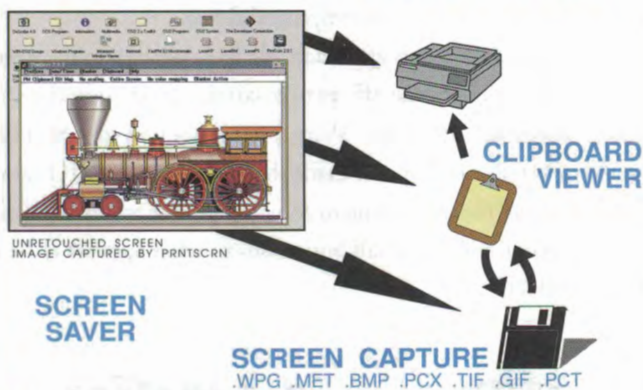
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warned in our cover story last October: there simply weren't enough hours in the day to make the transition and launch the campaign successfully. PSP's former agency, Lintas, was fired last May. At the time, one key Lintas executive declared, "They'll never be ready for the fall." That was true.

Time, the central thought behind the Warp launch, was what PSP and O&M never had. PSP advertising execs did not even know who their O&M contacts were until around Labor Day. The October launch date was at that point about a month away. The original concept was a lackluster product name, simply called v3, for version three. Then on September 28, sensing that PSP had again missed the boat, IBM CEO and Chairman Lou Gerstner stopped the ship mid-stream and ordered a more intelligent, marketable name: Warp. The fact that Gerstner ordered the last minute name rescue is proof that PSP and O&M had spent weeks in the old failure-ridden mindset. But there wasn't time to get it right.

Most significantly, O&M used the wrong Warp concept. Gerstner didn't want to reinvent the well-established Warp name used throughout the beta period. But that name, Warp, was taken from the *Star Trek* lexicon, evoking images of fantastic speed and physics-boggling abilities. O&M and PSP opted for the distorted, wobbly, can't-get-straight Warp, the misshapen wood Warp, the twangy guitar Warp. The wacko, wobbly, off-key Warp image O&M propagated did not have the same intrinsic power of the "faster than light" Warp. Voila, the power of the Warp name IBM invested so heavily in, the one Gerstner sought to capitalize on, was in fact lost, or worse, turned into a negative image business could not have confidence in.

## Wrong Media Approach

The concept of asking leading journalists during a several month period to journey to Austin for an

embargoed demonstration of Warp was viewed by many as an absolute irritant, and a gross waste of time. The launch itself, which even this reporter hailed as a great event, was much ado about nothing in the wake of an advertising campaign that did not get it right, a marketing strategy that got it wrong, and a product that unfortunately made headlines for its boo-boos. IBM would have done better to release the product at a major convention—of which there were many to choose from last fall.



## Wrong Sense of Timing

IBM's timing is wrong because the shots are actually not called by Louis Gerstner or Dan Lautenbach. They are called by Bill Gates. For example, Gates makes a specious promise about NT in 1993 and the world and IBM jump. It was baloney. Gates promised Chicago would premiere by late 1994, and PSP reacted with a now or never fervor. It happened again when Gates announced Windows 95 would release in the spring or summer of 1995. Almost on command, PSP slipped into the do-or-die mindset. *OS/2 Professional* was among the many who bought into this foolishness—again based on the misguided market goal of going toe-to-toe with the massive Windows installed base.

But if OS/2 is positioned as a Windows enhancer, then the advent of Windows 95 is not that important. The six months to die concept is idiotic. Many think Microsoft will be lucky to ship its 32 bit product by Fall Comdex. They have already announced another slip to August. Frankly, no one jumped up and down at the latest delay because OS/2 is not in the picture—only Windows 95. That says it all.

Whenever it ships, the product will be undoubtedly version 1.uh-uh, which will have as many compatibility problems as any other new version. It will be mid-1996 before things are straightened out. So much for six months. More than 30 million Windows 3.1 users will still need Warp's power. IBM should always be ready to spring into action positioning OS/2 as a viable alternative when Windows 95 causes more problems than it can solve. No one is suggesting OS/2 abandon its special identity. But until it can compete numerically, why not sell as many OS/2 copies as the Windows market can handle?

## Turning Away from the OS/2 World

There is currently a major debate in PSP on whether marketing to the existing OS/2 installed base is "preaching to the choir." This is IBM's biggest error. OS/2 devotees are taken for granted by IBM. And Austin is too out of touch to understand that its corporate advocates need to be convinced again and again to continue proliferating OS/2 throughout their supported systems.

Moreover, this group is the number 1 audience for upgrades and other IBM products—the key marketing issue PSP doesn't get!

But some key figures in Austin now consider the OS/2 realm something to shy away from as they embark further and further into the Windows world. The mere mention of OS/2 applications scares some of these execs because it raises the specter of an OS that requires a switch from Windows apps. The IBM Technical Update attached to Interop has been converted to a general IBM show, and many other OS/2 events have been cancelled. IBM is planning to deemphasize the uniqueness of OS/2 during 1995. Developer relations have been transferred out of PSP to a new division, Solution Developer Operations, that encompasses all software developers, from OS 400 to OS/2. The traditional lines of communications have been cut. Leading native vendors such as DeScribe and PSS are among the many who are intensely unhappy. DeScribe's Jim Lennane told *OS/2 Professional*, "My loyalty has been rewarded with treachery."

## Wrong Team

The IBM team is plain wrong. The same people who have made the same mistakes for years are still making them. They are incapable of change. No matter where OS/2 goes, they are still carrying the baggage of their long, emotional war with Bill Gates. No matter how they dress up any new campaign, any new strategy, or any new excuses, it is still chained to that heavy old baggage that wants to rent Broadway theaters to blow up Microsoft hourglasses, take expensive full page ads to mock NT, and print up T-shirts that advertise the competition's software.

O&M and PSP have together assembled a Keystone Cop marketing team that is simply shredding dollars. Can anyone explain why the same agency, O&M, has produced brilliant SOHO and personal computing ads for IBM's Aptiva, artistic and effective ads for IBM's corporate brand campaign, including the Italian Nuns talking about Warp—but the Warp campaign itself is ambiguous and ineffective? That's right. That captivating Nuns TV ad that so exquisitely sells Warp is not a PSP creation. That was Armonk.

There are many good people running OS/2 in Austin. But some of them can't improve upon their prior performance. Their continued failure will affect every corporate MIS using OS/2 because the lack of installed base is the central issue limiting the continued development of native 32 bit applications that corporate OS/2 needs and the OS/2 world deserves. ♦



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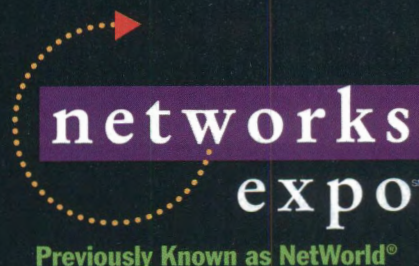
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# We Don't Need No Stinking Microkernel

BY MICHAEL S. KOGAN

**A**t the heart of IBM's PowerPC strategy is its Workplace OS technology, based on the Mach microkernel pioneered at Carnegie Mellon University. While IBM's microkernel certainly doesn't literally stink, it may not be the holy grail of portability, modularity, and robust system integrity that IBM hopes we think it is when it comes to OS/2 for PowerPC.

Microkernel mania has pervaded the industry the last two years, and it has been overhyped, oversold, and greatly misunderstood. In fact, when OS/2 for PowerPC finally does ship, both IBM and its customers may be disappointed to find the system is a resource hog and performs poorly when compared to fast x86-based Warp systems or other non-microkernel PowerPC operating systems.

The question that begs to be asked and answered is "Why is a microkernel the right choice for making OS/2 portable?" After all, UNIX didn't need a microkernel to be ported to basically every processor architecture in existence. To port UNIX across platforms one simply ports the C compiler, recodes the machine-dependent portions of the kernel, and then recompiles the rest of the kernel, device drivers, libraries, and utilities. No microkernel needed!

Today's OS/2 Warp is actually quite similar to UNIX architecturally; however, the implementation is not as portable, primarily due to its evolutionary origin. To make OS/2 portable IBM had (and still has) two basic options—directly port OS/2 Warp to PowerPC by rewriting the portions of the system coded in x86 assembler or 16 bit C code, or re-host OS/2 Warp on a microkernel.

Both routes require IBM to design and develop a new portable device driver model, convert the assembler portions of the kernel (mostly file systems and MVDVM support) to 32 bit C code, and port the existing 16 bit OS/2 utilities to 32 bit. Just this delta of

work will result in somewhat larger memory requirements than today's OS/2 Warp for x86 due to 32 bit alignment and portability issues. But it could yield a portable OS/2 that can be natively ported to other architectures similar to UNIX, and a portable OS/2 that is as fast as possible.

Going the microkernel route requires a further significant restructuring of the system, and the addition of even more over-

head to the system's performance and memory requirements. Notwithstanding UNIX, perhaps the best arguments against a microkernel for OS/2 on the desktop are the origins of the microkernel itself.

## Microkernel History

After the invention of the microprocessor, multiprocessing and the potential uses of massive parallelism grew rapidly, mostly in the form of proprietary MP architectures. Because of its portability and availability, UNIX was typically ported to these systems. The OS developers then had to MP-

enable their UNIX port, ultimately resulting in a reentrant multithreaded implementation—that is, multiple processors could concurrently run in the UNIX kernel as well as in applications.

This exercise in recreating the MP wheel for each new MP hardware platform was further complicated by the fact that the MP platforms could have not only different processors, but vastly different processor-to-memory interconnection schemes. For example, in a tightly-coupled SMP system, all the processors utilize a global shared memory. In a looser-coupled system, each processor may have its own local memory as well as sharing a global memory. On the massively parallel side of the spectrum (hundreds or thousands of processors), are very loosely-coupled architectures in which there is no shared memory and processors communicate over high speed buses, much like a network.

The research at CMU that produced the Mach microkernel





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architecture was chartered to extend the portable OS architecture's machine independent/dependent abstraction to take into account MP portability and scalability. The result is the microkernel architecture—a small portable kernel that provides the essentials for hosting any operating system personality in any MP environment.

The Mach microkernel environment is structured to maximize parallelism. Traditional operating system functions are packaged into multithreaded server processes that use the microkernel and each other to process API requests from multithreaded client applications. This decoupling of system components from the supervisor mode portions of the kernel allows more of them to be run in parallel, resulting in better utilization of the hardware resources.

To achieve the portability and scalability goals, client and server processes communicate using a microkernel-based message passing facility. It is the portable message passing of the microkernel that shields the rest of the system from the underlying memory architecture. Other positive attributes that result from the correct application of the microkernel approach are robust system integrity and multiple OS personalities.

**Microkernel Macro Cost**

The microkernel's message-passing client/server model provides an excellent portable architecture geared toward maximizing parallelism and exploiting processor resources. However these benefits come at a cost.

Even though message passing uses shared memory on uniprocessors and multiprocessors that support it, all code paths between clients and servers must still go through the microkernel for portability and scalability's sake, adding considerable overhead to API paths by performing more privilege-level transitions and context switches. For example a simple memory allocation call to the OS/2 kernel today that costs one round-trip to supervisor mode and back, might cost three round trips to supervisor mode and back plus two context switches on the microkernel!

Thus, microkernel developers must strike a balance between placing system code in the client libraries linked into client applications and/or in the OS servers to minimize the message passing penalty. This quest to regain performance also results in functions that bypass the server and go directly to the microkernel. In essence, the performance tuning is a fight against the architecture.

This is the price for portability — actually scalability — extra



## KOGAN'S KORNER

layers of code, extra supervisor mode traps, and extra context switches when compared to a non-microkernel portable implementation. As a result, micro-kernel-based implementations on uniprocessor and tightly-coupled SMP systems require more power and memory, making them a poor candidate for desktops (overkill actually).

However, microkernels do make great sense in other markets. IBM is looking to use its Workplace OS technology in future mainframes, minicomputers, and servers whose processing power comes from multiprocessor clusters of high-end PowerPC chips. In these architectures where various degrees of parallel processing from tightly-coupled to very loosely-coupled are present, a microkernel fits well. IBM can develop personalities for MVS and OS/400, and leverage their customers' software investments while providing scalable performance.

### Why?

What does IBM know about microkernels that everyone else does not? Even Microsoft realizes that a pseudo-microkernel architecture such as Windows NT is not suitable for competing on the desktop—witness Windows 95. However, IBM seems intent on delivering a microkernel-based OS/2 that promises to be uncompetitive. Especially compared to Warp on a decent Pentium-class or PowerPC 615 system.

The current OS/2 For PowerPC beta (alpha?) indicates that IBM still has a long way to go. The new device driver model has not debuted, the system is for PowerPC only, and it isn't even slated to support multiprocessing, the whole *raison d'être* for microkernels in the first place.

I keep thinking someone at IBM will wake up and realize that this microkernel is more baggage than it is worth when it comes to OS/2. With the unified Apple/IBM hardware slated for 1996, there certainly is plenty of time for some entrepreneurial development manager with a vision to assemble a team of Warp developers to take OS/2-specific work from the current microkernel effort and use it to do a native port of OS/2 Warp to the PowerPC.

This approach would yield the fastest, smallest, portable OS/2 Warp for PowerPC, and one that has a heads-up chance of competing with Windows NT.

Why is it that whenever IBM has a choice between a grand and glorious strategy and a tactical solution that it always seems to choose the most difficult way to get from point A to point B? ♦

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## INPUT

*continued from page 9*

*BBS that should be available sometime this month.—Jonathan L. Levine, Levine Computer Consulting.*

### Zero problem Warp

I am an engineering consultant who last month upgraded from OS/2 2.1 to Warp, and I am very pleased with it. I have had zero problems with Warp, including installation. It really is easy. The reliability and useful applications are terrific. I would like to suggest a couple of prerequisites for typical users before they put OS/2 on a personal computer: First, buy a UPS; second, buy a utility software package that allows backup, and correction of the .INI files (most will also backup your desktop, too); and third, buy a tape backup.

I've discovered that power blips occurred rather frequently in my home office that caused improper shutdowns. It doesn't take too many before you eventually see problems in your system. OS/2 utilities that "clean up" your .INI files and enable you to recover your desktop configuration can save you significant headaches.

Lastly, a tape backup is always nice, but with the amount of customization that OS/2 allows you to do, frequent tape

backups are your best insurance against starting over.

*Michael Anderson  
via the Internet*

### Stop the Insanity

Are you ready for this insanity? If you own Lotus products in both Windows and OS/2 formats, you have to purchase *separate* service contracts! So, I can pay \$179 for support of their Approach for Windows, and another \$179 for Ami Pro and 1-2-3 for OS/2. Lucky me!

They say it's because the OS/2 products are being supported by a team from IBM. It's seamless support when you dial in to Lotus, but it's not seamless when you write your check!

This really is infuriating. So much for Lotus's "support" for OS/2 as an operating system.

*Arlene R. Foreman  
Ft. Myers, Florida*

*We will have more on Lotus in the months to come. Stay tuned.—Associate Editor Claude d'Hermillon.*

### New Right

We appreciate the lengthy review of LinkRight version 1.1B in your Decem-

ber issue [Dot EXE]. However, you should know that at the time of publication, LinkRight version 1.1E was available on CompuServe as a patch to version 1.1

LinkRight v1.1E includes a new parallel port driver. This driver can deliver a transfer rate of up to 10meg/min. Since speed was the major negative aspect of Herb Tyson's review, it is very important to Rightware that *OS/2 Professional* take a test run of 1.1E and make readers aware that LinkRight has made great improvements in parallel port transfer rates.

Customer satisfaction is very important to us and personal attention to customer needs is the norm, not the exception, at Rightware. We have been consistently improving LinkRight with regard to transfer speed and general usability. Expect improvements to keep coming.

*Jeff Tremble, President  
Rightware Inc.  
Rockville, Maryland*

*At the time the article was written, version 1.1E had not yet been released. Generally, I file articles several months prior to the actual date of publication. Since then, I have obtained the latest version and hope to review it as my schedule permits.—Herb Tyson ♦*





Official IBM Reseller



# EXPRESS

THE QUICKEST WAY TO ORDER OS/2 APPLICATIONS, TOOLS, BOOKS, & ACCESSORIES.

## OS/2 WARP Fullpack Is Here!

**OS/2 WARP with WIN-OS/2\***

Order number 262 A, CD-ROM  
**OUR PRICE: \$129.00**

Order number 262 B, 3.5" diskettes  
**OUR PRICE: \$129.00**

\* prices and availability subject to change without notice.



**FEBRUARY FEATURES**

## February's Special Values!

Limited stock—then they're gone!

	WAS	NOW
<b>Tritus</b> Order number 167	\$95.00	<b>\$29.00</b>
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<b>SuperType Master Library</b> Order number 205	\$29.95	<b>\$19.00</b>
<b>PM2You</b> Order number 140	\$199.00	<b>\$157.50</b>
<b>Spans Map</b> Order number 241	\$895.00	<b>\$300.00</b>
<b>Back in a Flash</b> Order number 290	\$49.00	<b>\$9.00</b>
<b>Cursor Power</b> Order number 153	\$35.00	<b>\$7.00</b>
<b>Performance Plus for 2.1</b> Order number 115	\$24.95	<b>\$15.00</b>
<b>MIDI Renderer</b> Order number 155	\$69.95	<b>\$35.00</b>
<b>FaxWorks Pro</b> Order number 104	\$65.00	<b>\$59.00</b>
<b>Footprint Module for OS/2 2.1</b> Order number 157	\$95.00	<b>\$29.95</b>
<b>Pegasus Resource Monitor</b> Order number 168	\$99.00	<b>\$50.00</b>

**RESERVE**

Your copy of WARP TODAY and get manufacturers' rebates\* worth more than \$300.00—FREE with your WARP delivery.

\* Includes software by Bon Ami, Cirrus, Clear & Simple, Clearlook, Dux, HODStar, IBM-CAD, J & J, Multi-Net, PCX, Rightware and others.

**OS/2**

**Bonus Bargain!** Buy WARP with any Windows, DOS or OS/2 application and we'll give you a \$15 Rebate Coupon! (Limited time only)

## Lotus Smart Suite for OS/2 and OS/2 Warp (Bundle)

Buy our Lotus Smart Suite/OS/2 WARP bundle for the special low price of \$219 and save over \$600! (Limited time only).

Order number 340 A CD-ROM	MSR: \$824.00	<b>EXPRESS PRICE: \$219.00</b>
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Stac Electronics. Now put an average of 2.5 times as much data on your disk with the new Stacker 4.0 for OS/2 & DOS.

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## Desktop Observatory

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Remotely configure and password-protect desktops. Prevent deletes, copies, moves, dragging, shadows, or renames, or hide objects from view, and more!

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**INVENTORY REDUCTION**



## ◆ OS/2

### OS/2 WARP with WIN-OS/2 (Fullpack)\* IBM

The Fullpack is finally becoming available. The mandatory update to the Borg and OS/2 2.11 is finally a reality. Incredibly fast, fewer resource requirements, one-button install, Internet access—it's everything you have waited for. Engage!

Order number 262, A or B

**OUR PRICE: \$129.00**

### OS/2 WARP with WIN-OS/2 upgrade

Order number 278, A or B

MSR: \$149.00

**OUR PRICE: \$92.00**

### OS/2 WARP LAN version

Order number 261, A or B

**OUR PRICE: \$115.00**

### OS/2 WARP with WIN-OS/2, LAN version\*

Order number 263, A or B

**OUR PRICE: \$149.00**

### OS/2 WARP Version 3

Order number 251, A or B MSR: \$129.00

**OUR PRICE: \$89.00**

### WinGrate

DK Micro

Already bought Warp, but want Fullpack functionality? WinGrate migrates your WIN-OS/2 environment to a format compatible with Microsoft Windows and prepares your system for Warp installation. All you need to upgrade OS/2 2.1 (Borg) are copies of OS/2 Warp version 3, Microsoft Windows 3.1 or 3.11, and WinGrate.

Order Number 309 MSR: \$20.00

**OUR PRICE: \$10.00**

**WARP ADD-ON \$5.00**

\*prices and availability subject to change without notice. Specify "A" for CD-ROM, "B" for 3.5" diskettes.

## ◆ BACKUP

### Back Again/2-Pro

Computer Data Strategies

Back Again/2-Pro is a graphical 32-bit backup program for OS/2.

It supports backup to LANs, SCSI tape, and other removable media. Includes compression, backup scheduling, and command line utilities for complete disaster recovery.

Order number 236

MSR: \$149.00

**OUR PRICE: \$95.00**

### Back in a Flash!

CCT

Schedules incremental or comprehensive backup to diskette, Bernoulli, LAN drives or Optical. Support unavailable.

Order number 290

MSR: \$49.00

**CLOSEOUT PRICE: \$9.00**

### BakupWiz

PCX

BakupWiz is the OS/2 solution for backup to SCSI tape, Bernoulli, syquest, magneto optical, and tape auto-changers. Full support for EAs, long names, and networking is included. Your OS/2 system partition can be completely restored.

Order number 171

MSR: \$149.00

**OUR PRICE: \$95.00**

### Backmaster 1.1 for OS/2

MSR Development

Backmaster is the 32-bit backup program that supports popular QIC 40/80 tape drives. New features include auto-verify, file save sets, DOS/ Windows/OS/2 data exchange, enhanced disaster recovery utilities, support for high speed adaptors and parallel tape drives.

Order number 129

MSR: \$89.95

**OUR PRICE: \$65.00**

### Cheyenne ARCSolo for OS/2

Cheyenne Software, Inc.

ARCSolo is the first substantial native OS/2 backup solution. Designed with a WPS-like front end, it offers drag-and-drop functionality, multi-threading, and an object oriented approach.

Order number 240

MSR: \$295.00

**OUR PRICE: \$225.00**

### NovaBack for OS/2

NovaStor

NovaBack for OS/2 is a complete backup solution for all OS/2 workstations or networks. Support for OS/2 1.x and 2.x is shipped together. NovaBack supports more than 250 SCSI and QIC-80 tape drives.

Order number 138

MSR: \$79.00

**OUR PRICE: \$49.99**

**HOT VALUE**

**CLOSEOUT**

**NEW VERSION!**

## Stacker 4.0 for OS/2 and DOS

Stac Electronics

Now put an average of 2.5 times as much data on your disk with the new Stacker 4.0 for OS/2 and DOS. And it's OS/2 Warp compatible.

Order number 337

MSR: \$199.00

**OUR PRICE: \$175.95**



## Sytos Premium Backup & Disaster Recovery for OS/2

Sytron

The standard in powerful OS/2 data protection. Sytos Premium for OS/2 advanced features include complete Warp compatibility, disaster recovery, scheduling and the widest device support available.

Order number 332

MSR: \$299.00

**OUR PRICE: \$195.00**

**NEW!**

## ◆ DESKTOP MAPPING

### Spans Map

Tydac Technologies, Inc.

SPANS MAP is a comprehensive desktop mapping software package for the visualization and querying of geographically referenced data. It imports standard data formats including dBASE, Lotus and SPANS, and allows the user to view data in five simultaneous formats: digital map, chart, spreadsheet, image, and text.

Order number 241

MSR: \$995.00

**CLEARANCE PRICE: \$300.00**

## ◆ FINANCIAL/BUSINESS

### InCharge

Spitfire

In Charge is a full function personal and small business financial system. It supports multiple sets of books and, within a set of books, supports all types of accounts and multiple currencies. In Charge provides a set of integrated systems for managing multiple-year budgets, accounts payable/receivable, property, securities, insurance, and tax data.

Order number 326

MSR: \$79.00

**OUR PRICE: \$72.00**

**NEW!**



## ◆ UTILITIES

### ATS for OS/2

MHR

Advanced Task Scheduler for OS/2 is a production job scheduling utility that eliminates the need for human intervention during routine batch processing. ATS allows you to take complete control over how and when each of your scheduled programs will run.

Order number 181 *MSR: \$349.00*  
**OUR PRICE: \$315.00**

### "Bloodhound"

IBM

"Bloodhound" (aka SearchManager/2) is probably the most powerful text finding tool you can buy for a PC. Once you've indexed your files, this native 32 bit OS/2 utility and its Thesaurus will find and retrieve with lightning speed files in five languages containing the words you're looking for and linguistic variations and synonyms.

Order number 215 *MSR: \$300.00*  
**OUR PRICE: \$225.00**



LAN version add-on

*Runs on LAN Server, Novell or IBM TCP/IP.*

Order number 285  
**OUR PRICE: \$225.00**

### Chron

Hilbert

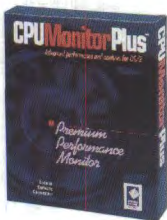
Chron is an OS/2 PM application that will schedule other OS/2, DOS, or Windows applications to run at a specified time and a specified frequency.

Order number 184 *MSR: \$99.00*  
**OUR PRICE: \$89.00**

### CPU Monitor Plus

Bon Ami Software Corp. A premium performance and analysis package for OS/2. CPU Monitor Plus permits real time monitoring and control of CPU, RAM, disks and ports, and program and thread control for all OS/2, DOS, and Windows programs.

Order number 108 *MSR: \$129.95*  
**OUR PRICE: \$79.95**



### CursorPower

North Shore Systems

Redesign and resize arrow, wait, I-beam, and other cursors. Create new cursors or turn graphics, text, signatures, and company logos into cursors. Toolkit includes OS/2 and Windows versions on one disk.

Order number 153 *MSR: \$49.95*  
**CLOSEOUT PRICE: \$7.00**

### DeScribe - Lights

DeScribe Inc.

A unique, unobtrusive CPU activity monitoring tool. Takes up only one pixel of screen space at the bottom of the OS/2 screen. Acts as a thermometer of CPU activity identifying CPU overload, hung systems and other multitasking activity.

Order number 217 *MSR: \$29.00*  
**OUR PRICE: \$25.00**

### DeskMan/2 v 1.5

Development Technologies

The essential Workplace Shell utilities. Dramatically improves the ability of corporations and users to get the most out of OS/2. Manage, secure, backup, and migrate the WPS; get organized with virtual desktops; more.

Order number 187 *MSR: \$79.95*  
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### GammaTech File Secure for OS/2

SofTouch Systems, Inc.

Encrypt your most precious corporate asset—your company data! Using the latest data encryption techniques available\*, GammaTech File Secure protects sensitive data from unauthorized viewing. Files are encrypted using unique file keys that cannot be replicated. Data can be obliterated using techniques that conform to U.S. Department of Defense 5220.22-M specifications. (\*This product's use of Data Encryption Standard algorithms means its sale, resale, or use outside the U.S. and Canada is expressly prohibited).

Order number 111 *MSR: \$39.95*  
**OUR PRICE: \$34.95**

### GammaTech Power Pack for OS/2

SofTouch Systems, Inc.

Power Pack is a PM-based application which launches applications and executes lengthy keystroke operations with a couple of function keys. It also includes a sophisticated editor to create, delete, or modify OS/2 INI files and the Extended Attributes associated with your data files. Supports both ASCII and hex. Enhanced screen saver with "hot" corners included with this offer.

Order number 110 *MSR: \$69.95*  
**OUR PRICE: \$59.95**



**NEW VERSION!**

### GammaTech Utilities for OS/2 Version 3.0

SofTouch Systems, Inc.

Performs FAT and HPFS optimization, file undelete, and desktop backup. PM and command line utilities perform disk analysis, recover corrupted files, back up/repair boot sectors,

and included a sector editor. Drives greater than 2 GB supported.

Order number 109 *MSR: \$149.00*  
**INTRODUCTORY PRICE: \$99.00**

### J&J Utilities for OS/2

J&J Computer Consulting

J&J Utilities v 1.5 is a collection of over 20 utilities including file locate, HPFS and FAT file defragmenters, process control automatic job scheduling, and more.

Order number 112 *MSR: \$49.95*  
**OUR PRICE: \$39.95**

### IBM AntiVirus/2

ISSC

IBM AntiVirus/2 uses new "neural network technology" developed by IBM Research scientists to detect previously unknown boot viruses and "learn" how to identify infected and uninfected sections of software, thus significantly reducing false alarms.

Order number 233 *MSR: \$89.95*  
**OUR PRICE: \$85.00**

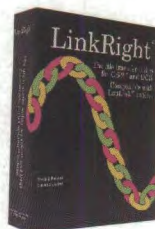
**NEW VERSION!**

### LinkRight 1.1

Rightware Inc.

This parallel/serial port file transfer utility package for OS/2 includes three versions: Presentation Manager, OS/2 command line, and DOS. Copy files to/from OS/2 and to/from DOS systems retaining EAs and long file names. Compatible with LapLink cables.

Order number 113  
*MSR (with cables): \$189.00*  
**OUR PRICE (W/CABLES): \$99.00**



Order number 114  
*MSR (without cables): \$110.00*  
**OUR PRICE (W/O CABLES): \$65.00**

### OS2Tree Lite

Levine

OS2TREE Lite is what XTREE Gold is to DOS, what Norton Commander missed, and more. Dynamic graphic file management for OS/2 supporting both FAT and HPFS.

Order number 141 *MSR: \$125.00*  
**OUR PRICE: \$39.00**



## OS2Tree Pro

Levine

All the features of OS2TREE Lite plus LAN drive, mainframe file upload/download support, and one year of upgrades and product support.

Order number 142 *MSR: \$250.00*

**OUR PRICE: \$89.00**

## Performance Plus for 2.1

Clear & Simple, Inc.

Optimize your system with the help of this collection of 25 OS/2 REXX Workplace Shell utilities plus a 100-page manual on finetuning OS/2 2.1. Also includes a bonus pack of 3,000+ OS/2 format icons.

Order number 115 *MSR: \$39.95*

**CLOSEOUT PRICE: \$15.00**

## Performance Plus for Warp

Clear & Simple, Inc.

Performance Plus is a system tuning and utility kit for OS/2 Warp.

Features a new simple GUI, DOS/Windows application optimizer, bitmap viewer, swap monitor with audible warning, and more. Plus bonus OS/2 bitmaps.

Order number 330 *MSR: \$39.95*

**OUR PRICE: \$27.00**

## Pegasus Resource Monitor

OnDemand Software & Services

The first affordable, professional performance monitor of OS/2 version 2.x. Features: statistical data logging, pop up, exceptions, and a real time graphical display.

Order number 168 *MSR: \$149.00*

**CLOSEOUT PRICE: \$50.00**

## PrntScrn

MITNOR Software

4 Integrated Utilities—1 Low Price! Copy any portion of any desktop image; import, export, view, print clipboard images and text; nine screen saver displays; date/time display. LAN installable; includes OS/2 2.x and 1.3 versions.

Order number 154 *MSR: \$115.00*

**OUR PRICE: \$105.00**



## PM Assistant

Utilis, Inc.

A comprehensive and integrated suite of utilities including: hot-key access to applications, automatic application placement on screen, keyboard macros, task scheduling, screen saver, and password protection.

Order number 183 *MSR price: \$129.00*

**OUR PRICE: \$99.00**

## QuikSwitch for OS/2

BitWare Consulting

Increase productivity by starting and switching between frequently used programs quickly by pressing key combinations (hot-keys). Works for DOS, Windows, and OS/2 applications. Speech-enabled, works with IBM's ICSS speech recognition software and most sound cards.

Order number 180 *MSR: \$39.95*

**OUR PRICE: \$29.95**

## System Sounds for OS/2

BOCASoft

System Sounds gives your computer a voice by associating audio with system events and keystrokes. Includes over one megabyte of professionally recorded sound effects in Microsoft audio format. Requires an audio card supported by MMPM/2 (included with OS/2 2.1).

Order number 252 *MSR: \$59.00*

**OUR PRICE: \$46.00**

## Secure Workplace for OS/2

Syntegration

The Secure Workplace for OS/2 is a collection of workplace objects and program utilities designed to provide workplace shell protection, setup, and support.

Order number 165 *MSR: \$59.95*

**OUR PRICE: \$49.95**

10-Station Enterprise Edition:

Order number 166 *MSR: \$549.95*

**OUR PRICE: \$459.95**

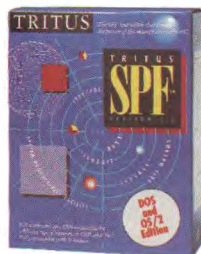
## SuperType Master Library

IQ Engineering

SuperType Master Library contains 96 scalable, professionally-designed, display, text and headline fonts to add style and creativity to all your applications in OS/2.

Order number 205 *MSR: \$29.95*

**CLEARANCE PRICE: \$19.00**



## Tritus SPF

Tritus

Tritus SPF is a 32 bit ISPF/PDF text editor for OS/2. Includes mappable keyboard, unlimited UNDO/ REDO, REXX macros, EBC-DIC support, Micro Focus workbench integration,

modifiable panels, cut/paste, text search, and DOS support. Edits files up to 256mb.

Order number 167 *MSR: \$195.00*

**CLEARANCE PRICE: \$29.00**

## Linkwiz (aka UniBeam)

PCX

Linkwiz is an OS/2 and DOS/Windows File Transfer Utility with an up to 2 mbps transfer rate over parallel cable. It's extremely easy to install and use. Native OS/2 code supports Presentation Manager, extended attributes, long file names and 32 bit I/O. Includes both a parallel and serial cable.

Order number 239 *MSR: \$189.95*

**OUR PRICE: \$179.95**

## WipeOut

BOCASoft, Inc.

Wipeout is a 32 bit screen saver for OS/2 featuring animated displays and video screen savers, integrated with multimedia audio, password protection, screen capture, and priority manager

Order number 245 *MSR: \$59.00*

**OUR PRICE: \$42.00**

## XFolder

The Desktop Company

XFolder arranges and aligns desktop and folder icons. Select row, column, or perimeter layouts. Position all icons or selected icons. Multiple levels of "Undo". Save and restore favorite layouts. Customize icon spacing.

Order number 292 *MSR \$49.95*

**INTRODUCTORY PRICE THRU 3/15: \$19.95**

## ZipStream for OS/2 2.1

Carbon Based Software

ZipStream is an OS/2 Installable File System (IFS) that mirrors access to existing OS/2 File Systems, and simultaneously provides automatic transparent file compression and decompression services.

Order number 295 *MSR: \$79.95*

**OUR PRICE: \$68.00**

## CD-ROM

### OS/2 Professional CD-ROM

More than 1,200 OS/2 shareware, freeware, demoware programs, tools, and scores of OS/2 resources.

Order number 163

**OUR PRICE: \$25.00**





## ◆ COMMUNICATIONS

### Communications Manager/2 v 1.1 IBM

Comprehensive communications processor includes improved 3270 and 5250 terminal emulation, more APPC functions plus features such as Data Compression and Distributed Feature Workstation.

Order number 280 *MSR: \$495.00*  
**OUR PRICE: \$310.00**

### RUMBA for the Mainframe. OS/2 version 3

Wall Data Inc.

Easy to use OS/2 to Mainframe connectivity with drag and drop file transfer and paste linking of host and PC applications. Interface support for MS SNA Server, APPC and CPI-C 2.0, Novell Netware for SAA and TCP/IP.

Order number 286 *MSR: \$400.00*  
**OUR PRICE: \$365.00**

### FaxForward

Computer Systems Integration, Inc. FaxForward is an Interactive Voice Response/Fax communication system designed to provide a software development platform for creating integrated voice, fax, database, and host supported applications.

Order number 206 *MSR: \$3,850.00*  
**OUR PRICE: CALL FOR PRICING**

### FaxWorks for OS/2

SofNet, Inc.

Faxing from any OS/2, Windows, or DOS application via a Class 1, Class 2, or CAS fax modem. The software also includes annotation

tools to allow electronic markups, fax broadcasting, and multiple channel options.

Order number 102 *MSR: \$149.00*  
**OUR PRICE: \$99.00**

10-user LAN version

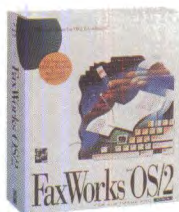
Order number 103 *MSR: \$699.00*  
**OUR PRICE: \$495.00**

### FaxWorks Pro

SofNet, Inc.

Award-winning FaxWorks Pro for Windows features advanced viewing clarity, extensive fax management tools, fax annotation, a cover sheet creator, modem diagnostics, letterhead merge, and more importantly, it's easy to use.

Order number 104 *MSR: \$129.00*  
**CLEARANCE PRICE: \$59.00**



### HODstar™ Pager (single license)

HODstar™ Support Solutions

Permits users to quickly and easily send messages to today's standard pagers. Also creates standalone programs to add pager functionality to any OS/2 batch file, REXX program, and commercial application. Supports all AT-compatible modems. Also available in site-wide and 'unlimited use' license.

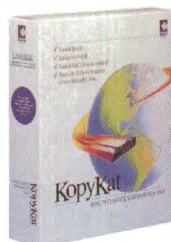
Order number 255 *MSR: \$85.00*  
**OUR PRICE: \$80.00**

### HyperACCESS/5 V3.1

Hilgraeve

Award-winning async comm program includes virus protection, host mode, on-the-fly un-zipping, 12 fast file transfer protocols, 17 terminal emulations. *PC Magazine* Editor's Choice.

Order number 161 *MSR: \$199.00*  
**OUR PRICE: \$129.00**



### KopyKat v1.0

Hilgraeve

Anything you can do on an OS/2 PC, you can now do remotely through a modem or over a LAN. Displays the entire remote desktop in a window on your desktop.

Order number 162 *MSR: \$199.00*  
**OUR PRICE: \$129.00**

### PM2YOU

Ridax

Control your OS/2 Desktop and Presentation Manager or character mode programs remotely from another OS/2 or Windows machine via dial-up modems, NetBIOS, APPC, TCP/IP, SPX, or Named Pipes.

Order number 140 *MSR: \$255.00*  
**CLEARANCE PRICE: \$157.50**

### PMCOMM 2.30

Multi-Net Communications

Pmcomm is a full-functioned, 32-bit, GUI, PM communications program. It supports complete key re-mapping, REXX scripting, host mode, pop-up menus, various terminal emulations, and file transfer protocols.

Order number 105 *MSR: \$99.95*  
**OUR PRICE: \$89.95**

### RhinoCom

Rhintek

Advanced Workplace Shell technology, easy customization through extensive macros, REXX scripting, and native OS/2 code make RhinoCom a

**NEW VERSION!**

**NEW!**

powerful tool for the sophisticated communications user.

Order number 336 *MSR: \$199.00*  
**OUR PRICE: \$179.95**

### TalkThru for OS/2

Software Corporation of America

The premier communications product for OS/2 providing terminal emulation including DEC VT340, file transfer (IND\$file X, Y, and ZMODEM etc.), scripting and support for IBM's EHLLAPI for asynchronous communications.

Order number 218 *MSR: \$350.00*  
**CLEARANCE PRICE: \$150.00**

## ◆ PRODUCTIVITY

### CA SuperProject

Computer Associates

CA-SuperProject is a complete set of project management and presentation tools that are easy to use and learn.

Order number 208 *MSR: \$649.00*  
**OUR PRICE: \$489.00**



### Clearlook

Clearlook

Developed exclusively for OS/2, Clearlook's cellular word processor gives users significant document processing capabilities. Invoke the flexible format control via an unlimited number of text areas and cells.

Order number 296 *MSR: \$199.00*  
**OUR PRICE: \$172.00**

### Deluxe American Heritage Dictionary

DUX Software

The 200,000-word Deluxe Edition is the first completely new dictionary for the 90's. Containing nearly twice as many words as the Standard Edition, it is one of the largest and most authoritative software dictionaries you can buy.

Order number 327 *MSR: \$59.00*  
**OUR PRICE: \$44.95**

### DeScribe 5.0 Subscription Edition

DeScribe, Inc.

Includes complete software and documentation, plus free upgrades and support through Dec. 31, 1995.

Order number 198 *MSR: \$299.00*  
**OUR PRICE: \$289.00**



## Footprint Module for OS/2 2.1

Footprint Software Inc.

The well-known suite for word processing, spreadsheets, charts, database and a report writer now comes in a module for additional legacy stations.

Order number 157 *MSR: \$149.00*

**CLOSEOUT PRICE: \$29.95**



## Lotus SmartSuite

Lotus

Take your native OS/2 applications to a higher level with Lotus SmartSuite. One integrated package provides word processing, spreadsheet, business graphics, and e-mail through Lotus's premiere products: AmiPro, Lotus 1-2-3, Freelance, and cc:mail.

Order number 260 *MSR: \$795.00*

**OUR PRICE: \$445.95**

Lotus SmartSuite Upgrade

Order number 260B *MSR: \$395.00*

**OUR PRICE: \$258.00**

## MESA 2

Athena Design

At last, an important new native OS/2 spreadsheet which takes advantage of SOM, OpenDoc, multithreading and Object Oriented User Interface. Also includes an object library so that you can integrate MESA objects into your own line-of-business applications.

Order number 328 *MSR: \$199.00*

**OUR PRICE: \$189.00**

## Person-to-Person for OS/2

IBM

It's the ultimate in PC interactivity! Person-to-Person permits up to five users to interact with each other in real time while viewing the same screen contents. Share, annotate, and print to common window contents while discussing the work over the phone.

Order number 277 *MSR: \$280.00*

**OUR PRICE: \$177.00**

## Power Translator Professional for OS/2

Globalink, Inc.

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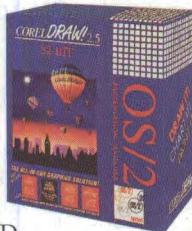
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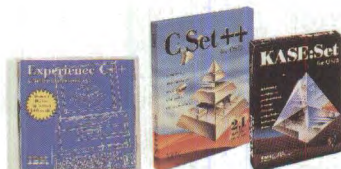
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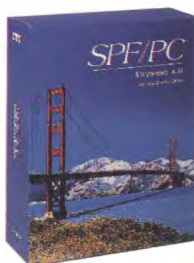
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### Application Development Using OS/2 REXX

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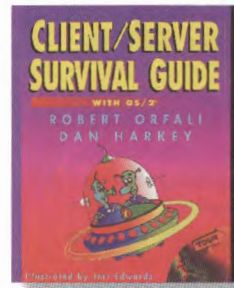
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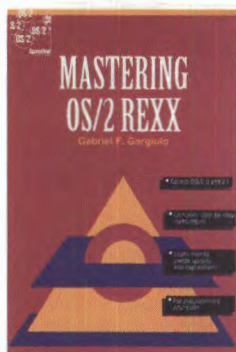
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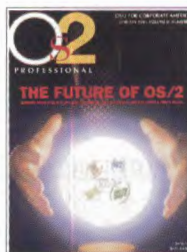
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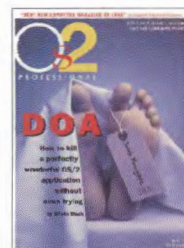
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# Slipping by without Advantis

With a little work and a local Internet service provider willing to give you a static IP address, you can improve your mileage on the Information Superhighway.

BY LEN DORFMAN

I'm a happy camper. I walk into my workspace, turn on my computer and watch with glee as OS/2 Warp Version 3 boots up. I move the mouse pointer over a SLIP icon resting on my LaunchPad and click once. Within a heartbeat I hear my modem dialing and shortly thereafter, Baxter (my 32mhz 486 machine) automatically logs on to LI Net, a local Internet provider. SLIP has been enabled. I open a drawer of icons on the LaunchPad. I click once on my NewsReader/2 icon and Baxter immediately begins downloading news from newshost.li.net.

With the news on its way to my electronic pressroom, I minimize the newsreader window and telnet to li.net to read the latest e-mail, and then move on to writing or programming tasks. After finishing some real work, I sometimes reward myself by playing with IBM's stunning WebExplorer for a while. The last thing I do before I shut down at the end of the day is exit SLIP.

I don't mind keeping SLIP up and running during an entire day because I'm in the enviable position of having a local access Internet provider within my calling area. Each call to LI Net costs me 10.6 cents with unlimited phone usage time. There are no additional costs for Internet access beyond LI Net's unlimited-time \$35 per month SLIP charge. Even if you aren't local to an LI Net node, rates in the \$35-\$50 per month range for 50 hours or more per month are not unusual, if you're willing to shop around.

I wasn't always this fortunate. Indeed, like many others who have bypassed the Advantis route, I was anything but a happy camper. I was a raving lunatic who could not get Warp's Dial Other Internet Provider program (slippm.exe) to work for any amount of love or money. I have never claimed to be a REXX wizard, but I could easily decipher and modify the sample REXX logon scripts included in Warp's TCP/IP package to seemingly work with my alternate provider.

When I selected the Dial option of the Dial Other Internet Provider program I saw my modified REXX script execute. The login proceeded with flawless precision. The SLIP Enabled mes-

sage appeared. I tried to telnet to li.net (LI Net's address) and couldn't connect. I tried other telnet sites on the Internet and couldn't connect anywhere.

Here's what should have happened when my REXX script executed within the Dial Other Internet Provider program:

- 1) Initialize the modem
- 2) Dial up LI Net
- 3) Glide through the username, password, SLIP login procedure at LI Net
- 4) Display the SLIP Enabled message
- 5) Route my IP and Annex IP addresses

Here's what actually happened:

- 1) Initialized the modem
- 2) Dialed up LI Net
- 3) Glided through the username, password, SLIP login procedure at LI Net
- 4) Displayed the SLIP Enabled message

Note that my IP and Annex IP addresses never got routed. I tried to route the IP addresses manually after the Dial Other Provider program had finished executing, but it proved too late. SLIP had been enabled but rendered quite useless.

I discovered my situation was far from unique after browsing through a few of the articles posted in comp.os.os2.networking.tcp-ip. I knew that the solution was beyond my understanding and that I must turn to the radiant S.R. in Boston, my reclusive mentor, debugging god and master of Doom. After verifying that LI Net had indeed provided the proper addresses, S.R. proposed a solution that bypassed the Dial Other Internet Provider program and using the slip.exe and slipterm.exe programs. Further collaboration with Mike Davis, a Team OS/2 member and president of MPD, Inc. (a Smithtown, NY Network and LAN Engineering firm) who was also experiencing trouble getting



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## HANDS ON

Warp's SLIP working with LI Net, resulted in a process that can get Internet neophytes up and slipping with far fewer hassles.

What follows are step-by-step instructions based on Mike's first method. Hopefully this will quickly get SLIP enabled with your local Internet access provider. Yes, it's a tad convoluted, but it should prove quite robust.

**Step 1:** Ask your Internet provider to provide you with the following information:

- A static address for Your IP (an address like: 199.171.6.21)
- A static address for your Annex (an address like: 199.171.6.6)
- Domain name: (a name like: li.net)
- Nameserver IP address (an address like: 199.171.6.12)

Note: some Internet services may not provide static IP addresses or may charge extra for the configuration. It is possible to modify the techniques presented here to read the IP address returned by your service after establishing a connection, and then pass the IP address along the chain.

**Step 2:** Create the resolv file. This tells programs where conversion site names to IP addresses takes place.

#### File Name: resolv

Placed in the \tcip\etc directory  
resolv file contents

```
domain (your Domain named here)
nameserver (your nameserver IP address here)
```

For example, this is my resolv file:

```
domain li.net
nameserver 199.171.6.12
```

The syntax for the resolv file is very important. At one stage in my getting the SLIP connection working with LI Net I had inadvertently placed an = symbol between domain and the IP address and nameserver and the IP address. I couldn't reference Internet site via name, I could reference Internet sites via IP number. I called S.R. and he diagnosed the problem in under 5 seconds. There appears to be no error reporting mechanism for resolv syntax errors. Be careful!

**Step 3:** Create the slip.cfg file. This sets important parameters which slip.exe must use (including which communications port to use, size of transfer packets, and compression status).

#### File Name: slip.cfg

Placed in the \tcip\etc directory



## HANDS ON

### slip.cfg file contents

```
interface sl0 {  
  device=COM1,  
  mtu=1006,  
  compression=off  
}
```

If your COM port is not 1 then adjust the device= statement accordingly.

**Step 4:** Create m.cmd file. This initializes the modem.

**File Name:** m.cmd

**Placed in the** \tcip\bin directory

**m.cmd file contents**

```
mode com1 57600,n,8,1
```

You should adjust the parameters to match your modem and com port. Telecom experts should add parameters as desired. Type HELP MODE at an OS/2 command prompt and double click on COM# for the syntax of this command.

**Step 5:** Create the hammer.cmd file. This routes the IP addresses so SLIP programs will operate properly.

**File Name:** hammer.cmd

**Placed in the** \tcip\bin directory

**hammer.cmd file contents**

```
ifconfig sl0 (Your IP Address) (Annex IP)  
netmask 255.255.255.0  
route -f add default (Annex IP) 1
```

For example, my hammer.cmd file reads:

```
ifconfig sl0 199.171.6.21 199.171.6.6 net-  
mask 255.255.255.0  
route -f add default 199.171.6.6 1
```

As you can see, the files are very short and sweet. You're now ready to log in to your local access provider and go SLIP sliding. When I was at this stage in my SLIP connection to li.net I moved my LaunchPad to the bottom of my display to facilitate my opening up a few OS/2 Windows at the same time. Once you have created the four files and placed them in their proper directories you're ready to begin the SLIP initialization procedure.

SLIP Initialization Procedure

- Open an OS/2 Window
- Change to the \tcip\bin directory

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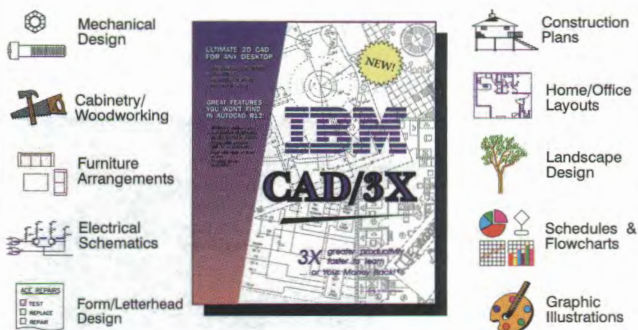
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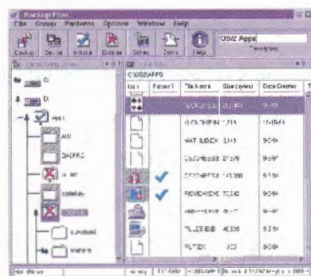
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## HANDS ON

- Type **m** to run the m.cmd program
- Type **slip** to run the slip.exe program
- Minimize the OS/2 Window running slip.exe
- Open another OS/2 Window
- Change to the \tcip\bin directory
- Type **slipterm** to run the slipterm.exe program
- Manually dial your provider by typing ATDT(phone #) from the command line
- Upon receiving the CONNECT message follow your provider's standard login procedure (such as user name, password, and the slip command)
- Open another OS/2 Window
- Change to the \tcip\bin directory
- Type **hammer** to run the hammer.cmd
- Close the OS/2 Window
- Bring the slipterm.exe window into focus by moving the mouse over the slipterm window and clicking the left mouse button
- Press F10
- Close the OS/2 Window

Note: If you do not have a static IP or Annex addresses, you can skip the **hammer** command listed above. Instead, look in the slipterm window and retrieve the address(es) reported after you logged in. Then manually enter the commands from the hammer.cmd file, substituting the addresses returned through the log in.

SLIP should now be running. If you wish to shut SLIP down simply bring up the Window List by chording (both mouse buttons pressed) over a free area on the desktop. Double click the left mouse button on the slip.exe menu item. When the slip.exe window appears press CTRL-C and SLIP will terminate. Don't be put off by these 17 steps. I can run through the entire procedure in under one minute (excluding dial-up CONNECT wait). This is a small price to pay if you've been having trouble getting SLIP enabled.

If you wish to contact Mike Davis for any reason you can find him on the Internet at mdavis@li.net. Questions to S.R. will have to pass through me.

Next month, we'll show you how to automate the 17 steps outlined above through a modified version of Mike's REXX script. We'll also tell you how to modify the script to work with your other Internet provider. You too can have true single click access to your local Internet provider from the OS/2 desktop. ♦

*Len Dorfman, Ph.D. is a teacher, writer, and periodic programmer. He can be reached on the Internet as ldofrman@li.net.*





# not yet ready for prime time:

## Mesa 2 version 2.0 for OS/2

Although this new OS/2 spreadsheet shows a lot of promise, it looks and feels more like an early beta than a commercial release.

REVIEWED BY HERB TYSON

**B**ased on the press releases, I was prepared for Mesa to make a good first impression. After the disappointment of finding the OS/2 version of Lotus 1-2-3 less capable in many respects than its Windows counterpart, I was ready for Mesa to fill the gap. And after the disappointment of seeing Computer Associates' CA-Compete withdrawn in its infancy, I was prepared for a new-generation, SOM-enabled spreadsheet for OS/2.

After waiting and waiting for a real OS/2 spreadsheet, with help that uses OS/2's IPF (information presentation facility) and other features that are fully OS/2 aware, I was prepared for Mesa to knock my socks off.

My socks are still on.

Don't get me wrong. Mesa—which began life on the NeXT platform—shows a lot of promise in a number of important ways. However, one has to wonder, given that Mesa's release was delayed for testing with the released version of Warp, why it looks and feels more like an early beta than a commercial software release. Why doesn't the Del key delete a single character when editing cell contents? Why don't the PageUp and PageDown keys work? Why are the menu accelerators disabled when a worksheet is open? Why can't you access the menu using Alt+hotkeys?

A text file that ships with Mesa 2 version 2.0 documents some of the known problems and states that they will be fixed in the

next "patch release." Athena has confirmed that it is already working on the next upgrade, although no release date has yet to be announced. Overall, the lack of CUA compliance makes using Mesa in its current incarnation an awkward exercise.

Mesa is also the only modern full-featured spreadsheet program I've seen that cannot record keystrokes. Why not? If this is a consequence of Mesa's macro language being based upon

REXX, then why not provide many more working examples of macros? While many OS/2 power users have a good understanding of REXX, most users don't. Studying macros, either recorded keystrokes or written scripts, is the only way many of us ever manage to learn and understand how macros work. With Mesa, if you want to automate a task, you're almost completely on your own.

Looking ahead, however, if the trend of using REXX as a

macro language continues, it won't be very long before it breaks out of the power user enclave, and the existence of a unified cross-application macro language will start to pay dividends. If and when that happens, Mesa will be at the forefront in empowering users. It allows use of any REXX extensions on the system, which means that by using Visual REXX or any of the other emerging object oriented tools for programming in REXX, OS/2 users have a tool that in some ways exceeds Windows' VBA (Visual BASIC for Applications).

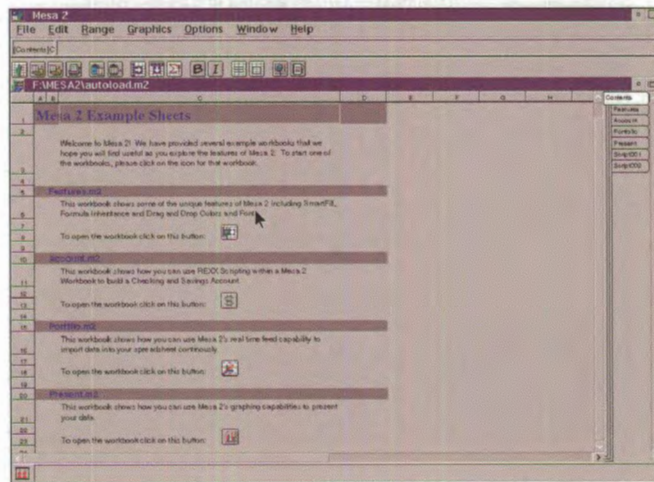


Figure 1. When you add pages to Mesa's workbook, the named tabs appear along the right edge of the workbook.



Now, if they only had more examples of how to use it with Mesa.

## New and Different

Let's be clear: this is not VisiCalc. Mesa—Spanish for table—may be the first spreadsheet on the market designed really to try to take advantage of OS/2's capabilities. While Mesa still sports a menu and toolbar—typical of Windows programs—the right mouse button is fully object-sensitive. Wherever you click it, you'll get a popup menu befitting the object you click.

Mesa also supports drag and drop operations—somewhat. For example, you can select a spreadsheet range and drag it wherever you want it. A nice touch is that the object you drag is fully visible during the process. While this comes at the expense of display speed, it's evidence that Athena is trying to carve out some new territory.

Athena has not extended the paradigm far enough, however. If you try to drag a selected range to another Mesa spreadsheet, you're out of luck. Similarly, Mesa graphics can't be dragged from one Mesa file to another. Drag and drop stops at the window's edge.

Furthermore, Mesa does not support drag and drop printing. Perhaps I'm simply expecting too much of a version 1.0 application (that's in effect what this is, since version 2.0 is its first effort for OS/2). On the other hand, printing is multithreaded. When you start a print job, you can immediately resume working in Mesa.

Mesa also uses multithreading for something called real time feeds. Hooked up to a steady stream of data, Mesa can display a graph of incoming data that changes dynamically as data arrives. At least as the product evolves, its strong foothold in multithreaded architecture will give it a lead over future competition on the Windows 95 platform.

When working directly with the spreadsheets, one of the first things you notice is the interface motif. Spreadsheets are presented as workbooks that consist of any number of pages. Each page can be either a spreadsheet layer or a script. Spreadsheet layers hold text, numbers, and graphics. Script pages provide a place for writing REXX programs (called scripts because they aren't compiled). You can accept the default names for layers and scripts—A, B, Script001, Script002, etc., or you can give them more meaningful names. As you add pages to a workbook, the named tabs appear along the right edge of the workbook, as shown

in Figure 1, providing an appearance that resembles OS/2's Settings notebook.

To run a REXX script, switch to that page and choose Execute from the object popup menu, as shown in Figure 2. (You can also double click on the page tab.) Alternatively, you can associate REXX scripts with graphical buttons, called Tools. Tools may be created through other applications, such as the icon editor, and imported into Mesa.

While the mix of spreadsheet and REXX pages may seem odd at first, the design is quite sensible. With Mesa, you have a constant list of REXX scripts right in front

of you, at the edge of the workbook. It's more convenient than pressing special keys or scanning through your spreadsheet. I've always found it odd that other spreadsheets imbed macros in the spreadsheet itself. Such an approach makes printing a challenge, since only part of the spreadsheet is really meant for presentation. Having scripts on distinct workbook pages creates a logical separation between the part you want to present and the ugly engine that makes it all work.

The workbook motif is also very useful for presentations, since it lets you lay out distinct models, problems, and scenarios on different pages. And because you can name those pages, Mesa

Table 1	
Mesa 2.2.0 for OS/2	Lotus 1-2-3 2.1 for OS/2
<i>Start application (with Word 6 already running)</i>	
8 seconds .....	16 seconds
<i>Open 100,000 cell Spreadsheet</i>	
30 seconds .....	14 seconds
<i>Save after changing 1 cell</i>	
15 seconds .....	27 seconds
<i>Make all cells bold</i>	
63 seconds* .....	25 seconds
<i>File size</i>	
1.38 mb .....	3.6mb
<i>Macro to step through 100 cells</i>	
37 seconds .....	4 seconds
*Only when selected column-by-column. When selected all at the same time or row by row, the program had not finished within 10 minutes. To abort the process, it was necessary to kill Mesa from the window list.	



## DOT EXE

improves not only accessibility but also the process of presentation.

Mesa uses a notebook object for most of its settings. For example, even if you use the menu to examine Graph Settings, Mesa pops up the Selection Manager notebook already opened to the Graph Settings page (as shown in Figure 3). For those more comfortable with the OS/2 object menu design, you can get the same page by clicking the right mouse button on a graph and then choosing Graph Setting.

Mesa also integrates native OS/2 strengths into font and color choices. Rather than include these section operations in the executable, Athena uses the OS/2 Font and Color Palettes. Unfortun-

nately, like the drag and drop functions, the paradigm falls short for some operations. For example, I wanted to drag different colors to slices on a pie chart—to no avail. Mesa just sat there without bothering to issue an error or warning message.

### Import/Export

Mesa can import Lotus .WK1 files and Excel 3 (OS/2 and Windows) and Excel 4 .XLS files. It can also export .WK1 files. Once I found my way

around some roadblocks, import and export of the 1-2-3 format files worked well, as did .XLS file imports. Although Mesa's help system claims to support export to .XLS format, I could not make it work. Each time I specified an .XLS extension, it would immediately revert to Mesa's native .M2.

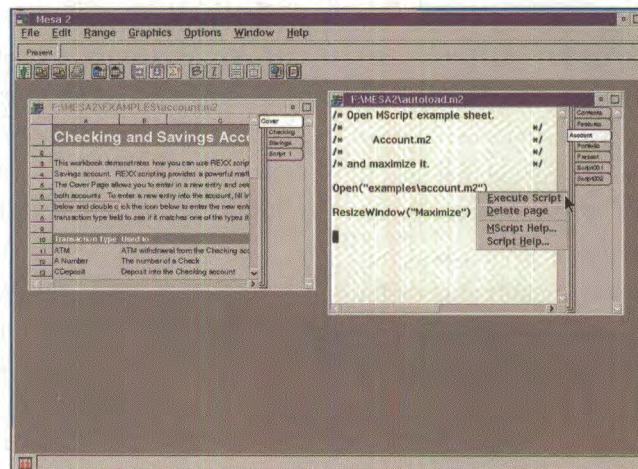


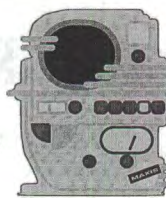
Figure 2. To run a REXX script, switch to that page and choose Execute from the object popup menu.

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For the longest time, I was unable to get Mesa to display only .WK1 or .XLS; the list came up empty. However, after lengthy experimentation, I discovered that the dialog box is based on the file type rather than the file extension. Hence, you must have the OS/2 "123 DOS Spreadsheet" type associated with the files. If your .WK1 files were created by a process that does not assign that file type (as would be true for most DOS and Windows applications), then Mesa's dialog box won't include those files in the file open list. As a workaround, you may specify <All files>, but then you get everything in the directory, not just the files matching .WK1. The file type option was entirely broken in the Save As dialog, offering <All files> as the only type.

### How Does Mesa Measure Up?

The bad news is that if you want to compare Mesa to the competition, you won't find many competitors in the field. While I've heard that other OS/2 spreadsheet programs are available, the only ones to come across my desk are 1-2-3 2.1 for OS/2 and Mesa 2.0.

In a prior review, we timed different versions of Lotus 1-2-3 for OS/2 performing various tasks. Alas, according to the Help file, "for legal reasons, Mesa does not support Lotus macros (TM)." So, one of our benchmark tasks—running a mortgage calculation benchmark macro—can't be used. While we could write a Mesa version of the macro, it wouldn't be the same.

Some of the other benchmarks, however, can be compared. Using Lotus 1-2-3's Fill command, for example, we created a 1,000 by 100 (100,000 cell) spreadsheet that contained an increasing counter, from 1 to 100,000. Remarkably, Mesa was not up to the task. At best, Mesa would create 1,000 rows containing 1 to 100 (or 100 columns containing 1 to 100), rather than the 1 to 100,000 that Lotus did. So, I saved the Lotus file in the .WK1 format (the only Lotus format supported by Mesa), imported it into Mesa, and then saved it back as a native Mesa spreadsheet. The results of the comparison are shown in Table 1, including a somewhat startling difference in file sizes.

Looking at the results in Table 1, one thing is certain: whether Mesa is faster or slower than Lotus 1-2-3 depends entirely on

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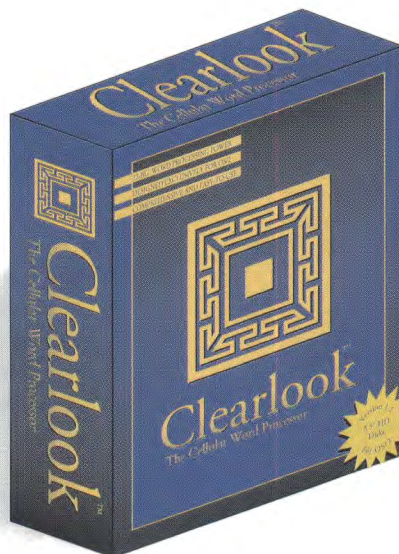
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what you're doing. Starting Mesa and saving a changed file takes about half as long as the same tasks for 1-2-3. On the other hand, Mesa took considerably longer to format cell contents, as well as to step through 100 cells, selecting each cell one at a time.

In the latter case, Mesa's display update strategy has a major impact. I noticed that each time a new cell was selected, the entire screen was redrawn, while 1-2-3 redrew the screen only when it was necessary to scroll the window to display additional cells. Mesa's slow response may also be affected by a bug that causes corruption of Mesa's (and other applications') non-maximized windows. For example, when you move a window

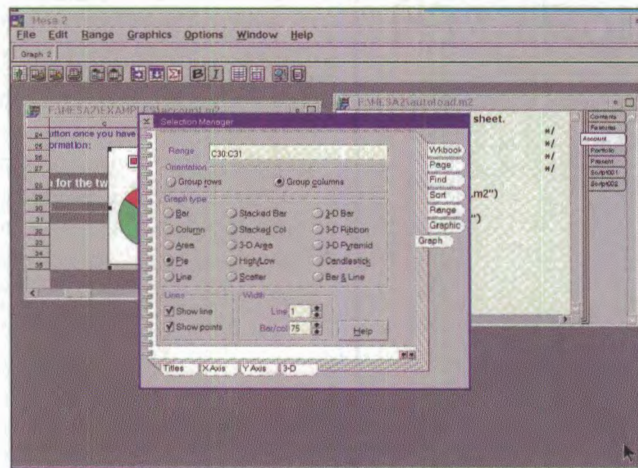


Figure 3. Even if you use the menu to examine Graph Settings, Mesa pops up the Selection Manager notebook already opened to the Graph Settings Page.

across the screen, it leaves residual pieces of the window on the display. Worse, other applications inherit this behavior and continue working incorrectly even after Mesa has been closed.

### Bottom Line

Unfortunately, Mesa isn't really ready for OS/2. In testing Mesa for this review, crashes were frequent—including several that could not be resolved using Ctrl+Alt+Del. Screen

corruption was a major problem, even in straight VGA. After each Mesa session, even those that didn't themselves crash, it was necessary to reboot the system to restore stable operation. Based on this version, and upon reassuring comments from Mesa on

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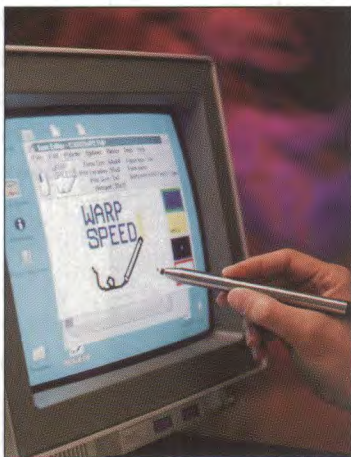
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CompuServe's OS2USER forum, it's likely that the next release of Mesa will be a substantial improvement. However, you would do well to try the product out before committing to it. ♦

*Herb Tyson is a computer industry analyst and consultant whose clients include IBM. He is the author of several books, including Your OS/2 Warp version 3 Consultant; 10 Minute Guide to OS/2; the Word for Windows 6 Super Book; and the forthcoming Navigating the Internet with OS/2 Warp. He can be reached on the Internet at tyson@cpug.org.*

## AT A GLANCE:

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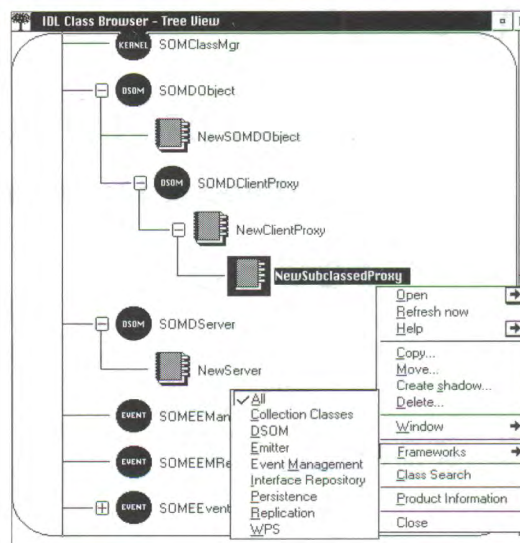
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# Clearlook 1.1

This product just may be first word processor that acts as if it were specifically designed for OS/2's Workplace Shell.

REVIEWED BY BRUCE BYFIELD

A year ago, word processing was a weak category in OS/2 native applications. Choosing a native word processor required a trade-off between function and speed, and posts on the Internet advised which DOS or Windows programs made better alternatives. The improvements in Ami Pro 3.0b and DeScribe 5.0 have brought the market new maturity and made native word processors comparable with those on other platforms.

To my mind, however, Clearlook is the first software company to think seriously about how an OS/2 word processor might differ from a DOS or Windows design. At the same time, Clearlook 1.1, the company's first release, returns users to last year's problem: in making efficiency and speed its first priority, Clearlook has (at least temporarily) left out some important features.

Even without its OS/2 orientation, Clearlook has the mark of careful design. For one, it has an accessible manual, full of examples and screen shots. To further guide you along, when the cursor touches an object, a line at the bottom of the screen tells you what the object does. Clearlook thus eases you into the driver's seat of a new operational experience.

At first, Clearlook looks conventional. Yet, beyond the menu, icons, and information bar, the evidence of a well thought out design continues with dozens of minor but useful features. The icons, for example, are large enough to see in high resolution, and look like pressed buttons when selected. Functions such as margins or line spacing are adjustable in simple diagrams. Similarly, a table may be quickly created by highlighting rows and columns on a grid. Unlimited Undo and Redo is allowed, and a format change can affect all or part of a document. When justifying both margins, Clearlook can vary the space between letters in addition to words. This creates a more balanced look and eliminates hyphenation. Although few of these features are unique to Clearlook, together they make the program easy to learn and use.

Most importantly, Clearlook acts like OS/2 itself and keeps you comfortably in control. As a frame-based word processor, Clearlook starts a new document with a color-coded basic text area.

For simple documents, no more is needed. However, for a complex document, such as a newsletter, you may overlay unlimited bitmaps or new text areas. A simple click of the right mouse button produces a popup menu from which you create the new area. Once created, new text areas behave like windows on the desktop, down to cursor shapes that change to indicate possible manipulations. As a result, anyone familiar with OS/2 should have no trouble using Clearlook for complicated layouts. Even Clearlook's basic organization is influenced by its integration with the Workplace Shell.

Unlike every other word processor since DOS, Clearlook shuns the single window command center. Instead, it starts with a status window. Within this window, users can change Clearlook's basic settings, screen colors, and hotkeys. They can also create a new document or load a template, either of which opens a separate editing window. From an editing window, the user may open yet another window for notes. If numbered, these notes may be added to the document as footnotes or endnotes.

In short, Clearlook controls basic operations through three main windows (not counting dialogs). Although this arrangement seemed odd at first, I soon felt more organized than with other word processors. Without entries for basic settings, the menu bar in an editing window presents only relevant editing functions. The reduced clutter helped me focus on the work at hand.

One of Clearlook's best attributes, however, is its efficient use of OS/2's 32 bit, multitasking architecture. Clearlook keeps its footprint small by borrowing OS/2's clipboard and fonts. The



## DOT EXE

memory requirements—700kb of RAM and 3mb hard disk space—suggest tightly written code, which is ideal for minimal systems. Furthermore, by leveraging its multitasking muscle wherever possible, Clearlook speeds routine actions.

Some operations, including automatic backups, do not interrupt data entry at all. Others, such as Search, Replace, and the Spell Checker, continue locating further matches while prompting for action on the current item. Performance will suffer if you create large documents full of bitmaps, but in general Clearlook offers unparalleled speed. Whether starting, loading files, scrolling or changing the view, Clearlook consistently outperforms any OS/2 word processor I've seen.

Despite these advantages, users should still consider their needs carefully before they buy. The best way to evaluate the program is to download the demo file CL\_DEMO.ZIP from Clearlook's bulletin board (703-204-3440). Although the demo partially disables printing and spell checking, it is otherwise complete, and will allow window shoppers to test drive Clearlook's features. I highly recommend a test drive because in contrast to its robust basic handling, Clearlook's range of options reveals several serious gaps.

The missing pieces lie not just in limited frills, such as the ability to import sound clips. Rather, the holes extend to functions that many users expect in modern word processors, including an equation editor and drawing functions. Nor are macros supported although the Markings and Fill In functions do provide text merging features and some functions which other word processors use macros for.

More importantly, Clearlook lacks some fundamental graphic and text filters. A screen capture function partially compensates for the absence of all but bitmap graphics format support. On the text side, Clearlook's only filter imports WordPerfect 5.2 documents. While widely used and appropriate for many word processing converts, even this filter is flawed. When I tried it, center and right alignments, as well as footnotes, were dropped from the imported document. Nor could I use the Go to Page function within the imported document. Export options were even skimpier, supporting only ASCII. According to company officials, fixing this filter is a top priority. The necessary corrections have been made, the company says, and were expected to be released at the end of January as Clearlook 1.11.

Matters should improve with the next release. Clearlook 2.0 is scheduled for initial beta testing in spring '95 and should be

released by summer '95. Current plans include support for most of the missing features outlined above. By the end of 1995, Clearlook also plans to release a database and a communications program—both will use the same status window as the word processor.

Meanwhile, Clearlook offers several incentives to buy version 1.1. Registered owners will be able to download all interim releases of 1.1 from Clearlook's bulletin board. In addition, they will receive a font disk and a discount on Clearlook 2.0. They will also receive unlimited technical support. In fact, according to John P. McCarron, Clearlook's president, if Clearlook ever charges for support, those who register now will continue to receive free support.

Despite these incentives, Clearlook will receive mixed reactions. Those who work with equations or graphics, or need to exchange files with others, should wait to see what Clearlook 2.0 delivers. At the very least, they will not want to delete their old word processors yet. By contrast, users who can live without such features will find Clearlook a comfortable place to work. They may even conclude—as I have—that Clearlook is the first word processor that acts as if it were specifically designed for OS/2's Workplace Shell. ♦

---

*Bruce Byfield is an instructor in English at Simon Fraser University and the author of a book on the science fiction writer Fritz Leiber.*

### AT A GLANCE:

#### **Clearlook 1.1**

Clearlook Corporation

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Burke, VA 22009-1219

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(Other prices available for educational  
or group discounts)





## MARKETLINE

*Product News for the OS/2 User*

# SCOOPS

## First Look at DBExpert

OS/2 users weary of resorting to DOS or Windows-based databases in lieu of native OS/2 products may soon have a viable alternative. At press time, Designer Software, Inc. was in the early stage of beta testing DBExpert, a full-featured relational DBMS running under OS/2 and the Workplace Shell. The multi-threaded, 32 bit product is expected to ship sometime next month, with no immediate plans for a Windows version. The company has positioned the product to appeal

to Microsoft Access users, and early alpha testers report a strong operating resemblance to that product.

DBExpert consists of a table, form, visual query, report, and macro designer, with macro support for "if-then," "for," and "while" constructs. The macro designer also allows Users to call internal system functions, such as "open form" or "execute query," while also serving as an internal programming language.

Working with DBExpert's forms, users can embed graph-

ics, bitmaps, data fields and text, with support for a wide variety of field types, including text, integer, floating, memo, money, time, timestamp, bitmap, date, and yes/no. In addition, support for subforms enables users to review and edit related records. Like the form designer, reports can be visually laid out, incorporating fields, graphics, and bitmaps. Of particular note is DBExpert's two pass reporting feature. This capability enables users to create reports consisting of subtotals and percent-

age calculations, without the aid of a dedicated report writer.

The product's first release will support Oracle, DB2, and dBase IV files. It defaults to dBase IV file structures, yet also ships with an internal database engine and proprietary file system. A run-time module allowing compilation to an .EXE file is currently under development, and will be available soon after DBExpert's introduction. Pricing is expected to be just under \$500.

## New Products

### Position that transition

Liant Software, a specialist in tools and technologies for transitioning legacy applications to client/server computing, is now delivering Open PL/I version 6.0. With a focus on the 20 percent of the mainframe population using PL/I, the new version is said to ease migration from mainframe-based or minicomputer-based PL/I applications to open client/server environments.

Open PL/I version 6.0 supports Windows NT, VSAM, and specific IBM and DEC

extensions. The cost for a four-user developer license is \$12,000. Open PL/I can also be tested through Liant's Proof-of-Concept Program for \$995 per month. Liant Software Corporation, 959 Concord Street, Framingham, MA 01701-4613. (508) 872-8700, fax (508) 626-2221.

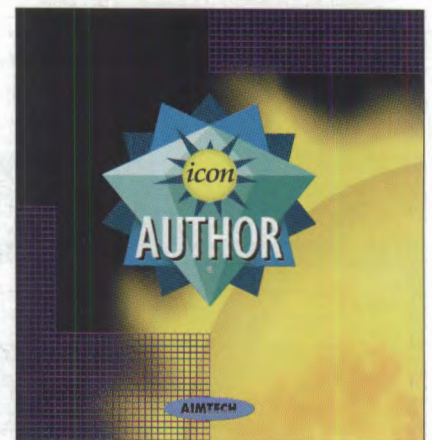
### Easy interaction

IconAuthor 6.0, a solution for creating interactive enterprise-wide multimedia applications, is being released by AimTech Corporation. The icon-based authoring system adds cross-platform file format compati-

bility, improved animation capabilities, and database accessibility using Structured Query Language (SQL). IconAuthor allows an application created on one platform to be played on another and provides this capability across OS/2, Windows, UNIX/-Motif, and Macintosh.

Non-programming multimedia professionals can create interactive multimedia applications or enhance existing

enterprise applications by incorporating text, graphics, animation, audio, video, and databases into their applications. The cost is \$4,995 and





special pricing is available for educators, course developers, and resellers. AimTech Corporation, 20 Trafalgar Square, Suite 300, Nashua, NH 03063-1987. (603) 883-0220, fax (603) 883-5582.

## Network on an Easel

Easel Corporation is announcing its newest version of ENFIN, the company's object oriented client/server application development tool. ENFIN 4.1 was developed to make the underlying Smalltalk language easier to use and to increase developer productivity.

New features for ENFIN 4.1 include enhanced support for reuse of user interfaces through interface components and screen inheritance, an event editor for creating point-and-click interfaces, an integrated programmer's editor for modifying Smalltalk source code, a small program generator to reduce the size of runtime applications, and enhancements for better network communications.

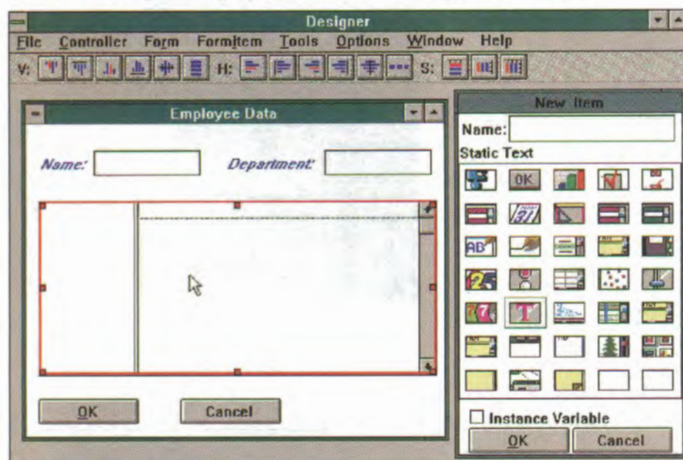
Pricing begins at \$3,995 and varies depending upon

options and configuration. Easel Corporation, 25 Corporate Drive, Burlington, MA 01803. (617) 221-2100, fax (617) 221-3099.

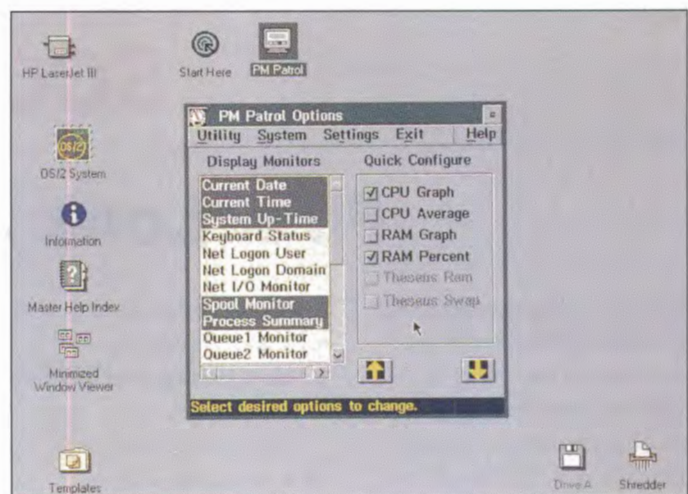
## Two from Rational

Rational Software Corporation is releasing two new products that bring the benefits of object technology to client/server development. Rational Rose/Object Pro and Rose/SQLWindows are graphical, object oriented, software engineering tools for analysis, design, and implementation of client/server applications. The tools enable developers to graphically define and model their applications and to automatically generate source code and database schemes for their client/server systems.

Rose/Object Pro automates production of code in Trinzic Corporation's Object Pro. Rational's Rose/SQLWindows automates production of SQL-Windows code and also supports Oracle 7 and Gupta SQLBase SQL/DDL. Both products are available for PCs running OS/2 or Windows and are priced at \$1,495.



ENFIN 4.1 increases developers' productivity by making Smalltalk easier to use.



PM Patrol 3.0's 25th status line allows users to continuously monitor their system's resources.

Rational Software Corporation, 8000 West Park Drive, McLean, VA 22102. (800) RAT-1212, fax (703) 761-4407.

## Control with Patrol

MSR Corporation is now shipping PM Patrol 3.0. A resource management program for OS/2 users, PM Patrol monitors OS/2 resources including RAM, hard disk space, print cues, logical network devices, and swap file size. The program schedules tasks, monitors and displays operating parameters, and continuously displays selected parameters on a "25th status line" at the bottom of the display screen. From this status line, users have access to system and hardware information, which is customizable for every level of OS/2 user. Special options are included for programmers and LAN administrators. The program sells for \$99.95. MSR Corporation, 4619 North Street, Nacogdoches, TX 75961. (409) 564-1862, fax (409) 560-5868.

## Happy hunting

BrownStone Solutions is releasing its strategic tool for the corporate "knowledge worker," EasyView 3.0. The tool enables end-users to search databases for information using the platform and graphical user interface they feel most comfortable with.

Utilizing a business-driven user interface that consists of a series of cabinets and folders, the user points and clicks through corporate data banks. EasyView's repository-driven architecture enables it to navigate through heterogeneous databases located on various hardware platforms (e.g., OS/2, MVS, Unix, Windows). Call for specific pricing information. BrownStone Solutions, Inc., 295 Madison Avenue, Suite 1705, New York, NY 10017. (212) 370-7160, fax (212) 867-2520.

## Rumbaugh with your apps

System Architect is now available from Popkin Software & Systems, Inc. The new appli-



## MARKETLINE

cation development tool is the first multiuser, repository-based application tool to provide automated support for the OMT/Rumbaugh technique, one of the most widely used object oriented methodologies. System Architect enables organizations to leverage their development of corporate data models and ensures consistency in the way data elements are represented in multiple databases. For OS/2 2.1 or higher the single user version is \$1,795 and \$3,590 for the first two copies of the network version. Popkin Software & Systems, Inc.,

11 Park Place, New York, NY 10007-2801. (212) 571-3434, fax (212) 571-3436.

### Balancing act

Spitfire Software is shipping In Charge for OS/2. The benefits of 32 bit processing and flat address space are among the features included in this application, positioned to capture the audience of their leading competitor, Quicken.

In Charge supports multiple sets of books and unlimited accounts. It handles currency conversion and provides a set of integrated systems for

managing multi-year budgets, accounts payable/receivable, fixed assets, securities, insurance, and tax data. In Charge is priced at \$79. Spitfire Software, 325 Breakwater Ridge, Atlanta, GA 30328. (404) 257-0187.

### Link in a blink

Blinkinc is releasing Blinker 3.1, a product that supports incremental linking for protected mode CA-Clipper programs. Blinker 3.1 is a royalty-free DOS extender, Windows and OS/2 linker, and DOS dynamic overlay with a dual mode feature. Dual mode

enables a programmer to create a single program that will automatically run in either real or protected mode, depending on the runtime machine's resources. Version 3.1 includes support for OS/2, protected mode support for all Microsoft C/C++, and FORTRAN graphics libraries. The product is regularly priced at \$299 but will be available for a limited time at an introductory price of \$249. Blinkinc 8001 West Broad Street, Richmond, Virginia 23294. (804) 747-6700, fax (804) 747-4200.

## News

### OnSpec ad altered

*OS/2 Professional* has used its contractual prerogatives to alter an advertisement in the current issue which, in the publisher's opinion, included a tasteless depiction of a "voluptuous" woman, dripping wet in a string bikini. OnSpec, which provides sophisticated manufacturing software for factory plant managers, created an ad that juxtaposed a lifeless stick-figure designated "Windows" against an alluring, bikini-clad female over the OS/2 Warp logo. The ad is based on a 1995 Warp calendar that OnSpec produced.

*OS/2 Professional* felt the advertisement was denigrating to women, and so agreed to publish it only if the magazine could graphically drape an artificial covering over the female to meet standards of publication.

OnSpec president Donna Terp explains that her advertising images must appeal to the traditional factory envi-

ronment, which has long been known for calendars and ads decorated with scantily-clad women. Snap-On Tool recently made national news when it phased out its traditional cheesecake calendar series, saying the factory worksite has changed.

### IBM scopes Kaleida

IBM announced that it will incorporate technology from Kaleida Labs Inc., an Apple Computer Inc. and IBM joint venture, into some of its new products. The technology will allow developers to be more productive when they work with IBM's software because of Kaleida's object oriented programming approach.

IBM plans to incorporate Kaleida's technology into its VisualAge application development software, which will permit application developers using VisualAge to create new program objects when the application is running.

Kaleida has just announced

its Media Player, a multimedia development platform, for Windows and the Macintosh platform and told *OS/2 Professional* that it will be available for OS/2 sometime in Q2.

### RealWare Award

The RealWare Award for most outstanding solution in Desktop Database and Workgroup Computing was received by the University of Alabama and IBM at the DB/EXPO '94 in New York City.

IBM's DB2 for OS/2 was selected by the University of Alabama as the database of choice for an application that utilizes relational database and multimedia technology for improving the process of voting during student elections.

The kiosks used for voting during student elections ran OS/2 and allowed voters to review candidates by means of a digitized video segment and served as voting devices that communicated with the data-

base server. Dr. Rod Riley, associate director of the Seebek Computer Center at the University of Alabama said, "IBM had the solutions for us when we decided to implement a multimedia kiosk."

### Good marks

Lexmark International, Inc. is reporting its best year since becoming independent of IBM four years ago. Total worldwide revenues are expected to be in excess of \$1.8 billion, up about 10 percent from last year.

Created in 1991 when IBM's information processing products business became an independent company, Lexmark develops and manufactures printers, typewriters, and keyboards. This year's revenues reduce the company's debt by \$280 million; its debt is now \$370 million as it continues to prepay debt from the original \$1.15 billion at the time the company was formed. ♦



# THE



Shareware

# CD-ROM

Demoware

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Tips

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Freeware



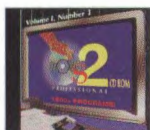
# LIVE

Stupid Tricks

# WITH-

Resources

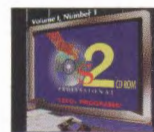
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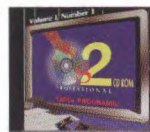
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# THE IS NOTEBOOK

*Tips and Techniques for the OS/2 Professional*

## LaunchPad Building

BY GORDON SCOTT

**D**on't waste your time with Warp. After all, you bought Warp to save you time and effort, right? Yet many new Warp users spend hours setting up their desktop icons and layout: all in the name of efficiency, of course. The theory behind this strategy is that the user can place the most frequently accessed icons in easy to reach places or in groups of related tasks. But that's like building roads before you have any idea of the traffic pattern.

Warp presents a better option. The new LaunchPad acts as an expressway to productivity. Yet, even with the LaunchPad, if you load it up with icons before you know what you need, it becomes as cumbersome to navigate as an L.A. Freeway. Instead, you should help the LaunchPad build itself. The key to efficient LaunchPad building lies in adding two basic templates for the first few weeks of usage.

### Place a Program template and Folder template on the LaunchPad.

- Open the Template folder.
- Drag a new program object from the Program template to the desktop.
- Drag the program icon to the LaunchPad. This creates a shadow of the program object on the LaunchPad.
- Click once with the right mouse button on the program icon in the LaunchPad. This displays the pop-up menu.
- Select **Settings** from the pop-up menu.
- Select the **General** tab in the Settings notebook.
- Select the **Template** checkbox on the General page.
- Close the settings notebook.

- Repeat these steps using the Folder Template and a folder object.

The preceding steps may seem a bit awkward since Warp prevents direct dropping of a template on the LaunchPad. But a little extra effort at the beginning saves time later. With a program template on the LaunchPad, creating a new program object is a simple matter. This is particularly useful when first setting up your Warp system or whenever you add new programs and applications to your system.

With these two key templates readily accessible from the LaunchPad, you may build your desktop arrangement in an evolutionary manner, adding a little each day. When you find yourself digging through too many folders, icons, or command prompts to reach a file, simply use the templates on the LaunchPad to create the required object at will.

### Remove the Shredder from the main LaunchPad bar.

- Click on the LaunchPad's Shredder icon with the right mouse button.
- Select **Locate** from the pop-up menu.
- Select **Original** from the cascade menu. This should open the OS/2 system folder with the Shredder object highlighted.
- Hold down the Ctrl and Shift keys, then drag the shredder object to any appropriate drawer button. This creates a second shadow of the Shredder object on the LaunchPad.
- Click on the LaunchPad's original Shredder icon with the right mouse button again (not the Shredder you just created in the drawer).

- Select **Delete** from the pop-up menu.

Warp's new BonusPak programs make better use of drag-and-drop capabilities. As a result, leaving the Shredder on the LaunchPad may leave you vulnerable to accidental object deletion (by missing your intended target and hitting the Shredder when you drag and drop). You can mitigate the problem by moving the Shredder to a LaunchPad drawer, where you would store less frequently accessed objects.

### When you need enhanced security, set your system to automatic lockup with password protection.

- Click once with the right mouse button on the desktop to display the desktop pop-up menu.
- Select **Settings**.
- Select the **Lockup** tab on the Settings notebook.
- Select the **Automatic lockup** radio button.
- Adjust the amount of idle time required to start the automatic lockup by using the **Timeout** entry field.
- Click twice on the right-pointing arrow at the bottom of the notebook page to display page 3 of the Lockup settings.
- Enter a password.
- Select the **OK** pushbutton.
- Close the Settings notebook.

If your office requires security procedures, or if your department has a system in too public an area, using an automatic password can prevent problems from casual passers-by. The automatic lockup times itself against periods of no mouse movement or keyboard entry.



If you enter in the wrong password, Warp (unlike previous versions of OS/2) will simply tell you the password was wrong and ask you to try again. However, if you forget your password, you will suffer a minor setback.

**Try not to forget your password, but if you do, use the MAKEINI program to reset your system's password.**

- Turn your locked system off and then turn it back on again.
- Hold down the Alt and F1 keys as soon as you see the small white box appear in the upper left corner of the screen.
- When given a list of Recovery Choices, select C (this displays an A:\ prompt).
- Change to the directory where OS/2 is installed (for example, enter C:, then enter CD\OS2).
- Enter MAKEINI OS2.INI LOCK.RC and reboot when the program finishes.

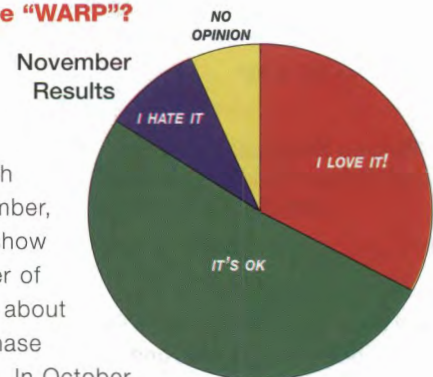
The above steps will reset two parameters in your OS2.INI file. The procedure will not reset all your desktop settings to system defaults. Instead, it will affect only the password and the automatic lockup. Both the password and the automatic lockup on start feature will be disabled. ♦

*Gordon Scott works as an electronic publishing technical advisor for IBM in Boulder, Colorado. He can be reached via the Internet by sending e-mail to [gbs@vnet.ibm.com](mailto:gbs@vnet.ibm.com).*

## OS/2 PROFESSIONAL RESULTS OF SURVEY 2,3 AND 4

	OCT	NOV	DEC
<b>1. How much have you seen or heard about IBM's launch of OS/2 Warp Version 3?</b>			
<i>A great deal</i>	38.39%	41.40%	67.92%
<i>Very Little</i>	51.34	54.70	32.08
<i>Nothing</i>	11.61	2.69	0.0
<b>2. Where have you seen advertising?</b>			
<i>TV</i>	7.54	50.75	79.63
<i>Radio</i>	2.01	3.83	10.19
<i>Newspaper</i>	18.09	21.86	25.00
<i>Magazines</i>	77.89	87.98	90.74
<i>Billboards</i>	.50	1.64	.93
<i>Direct Mail</i>	17.59	24.59	29.62
<i>Other</i>	38.69	21.31	10.19
<b>3. So far, what has this advertising motivated you to do?</b>			
<i>Seek out more information</i>	21.28	18.44	10.68
<i>Decide to buy it</i>	21.81	12.85	15.53
<i>Nothing</i>	8.51	8.94	6.80
<i>My decision was made before seeing any advertising</i>	48.40	55.31	66.02

### 4. What do you think of the name "WARP"?



We repeated the same Warp Launch campaign survey in October, November, and December 1994. The results show heightened awareness by December of Warp advertising and publicity. But about half said they had decided to purchase OS/2 prior to news and advertising. In October and November, only about 16 percent of respondents were willing to wait until 1995 to upgrade. By December, 37 percent said they would upgrade in the first half of the year.

Other results show one thing is for sure: OS/2 Professional's corporate users overwhelmingly stay current. Only about 2-3 percent, depending upon the month, indicated they still used 2.0. But about 86 percent have already upgraded from 2.0 to 2.1/2.11. We therefore expect most corporate users will Warp their worksites. Not unexpectedly, about half of all corporate users cited reduced memory requirements as the most appealing feature in Warp; Internet access was the favorite of only about 15 percent.



# Debugging OS/2 Programs

BY CAREY GREGORY

**D**ebugging an OS/2 program, especially multithreaded and Presentation Manager (PM) ones, means working with OS/2's unique features—ones you haven't encountered before in the DOS and Windows world. This month we'll take a look at a few secrets that make OS/2 debugging faster and easier. One obvious difference between OS/2 and its DOS-based counterparts is how you handle the system APIs.

While the OS/2 APIs may be unfamiliar, they present no particular difficulties from a debugging perspective. After all, a call to `WinCreateWindow()` under OS/2 is little different from a call to `CreateWindow()` under Windows, and both will fail if you pass the wrong parameters. The truly challenging areas for the new OS/2 programmer lie in the features that are OS/2's greatest strengths: preemptive multitasking, multithreading, and an event-driven GUI.

## Timing Problems

Like any event-driven system, including Windows, bugs in PM programs can be timing dependent. You should immediately suspect a timing problem when the bug can be reliably reproduced at any time except when you run the debugger to find the cause. If you've ever worked on a device driver or realtime system, you already know that timing related bugs can be extremely difficult to diagnose. If the debugger is masking the problem, it's usually because you're altering the timing of events by stepping through the code or hitting breakpoints, thereby preventing the problem from occurring.

When timing causes problems, ancient debugging techniques from bygone eras come to the rescue. More often than not, you can insert `printf()` calls at strategic locations in the code to trace the series of events and contents of variables. Usually, this will not alter the timing enough to mask the problem. PM imposes a slight hitch, however, because you cannot print directly to the screen using text-mode functions like `printf()`.

One way to circumvent the screen output problem is by opening a file with `fopen()` and directing output to that file with `fprintf()`. However, it's far simpler to just start the program from

the command line and redirect stdout to a file. This is much easier, and contrary to popular belief, works perfectly well. If your program is crashing, you may need to place an `fflush()` call after each write to avoid losing the debug output I/O library's buffers.

If even the slight delays imposed by the `printf()` function continue to mask the bug, an alternate approach is in order. One possibility is to write debug output to a named pipe (Code Cache, September 1994) or a queue (Code Cache, April 1994) and then have a small server program print the output or write it to a file. Both pipes and queues are much faster than file I/O and therefore less likely to interfere with program timing. The drawback is that queue and pipe redirection require considerably more work than simple `printf()` calls.

The timing problems that can arise in PM programs can haunt multithreaded applications as well. Furthermore, multithreaded PM programs may compound an already tricky situation. In most cases, however, timing problems in a multithreaded program stem from race conditions that can be easily fixed with a mutex semaphore (Code Cache, May 1994). Since non-PM programs generally have no rigid time limits imposed (akin to processing messages in PM), waiting on a semaphore typically has few side effects. With PM programs, however, you should avoid waiting on semaphores within the message processing loop.

The techniques described above for PM applications work equally well for character mode multithreaded applications with one caveat. With most character mode applications you must protect the output with a semaphore in order to prevent intermingling of data from two or more threads.

## Using Debuggers with PM Applications

If you're using an interactive debugger such as IPMD to debug a PM program, you've probably already encountered a couple of difficulties. If you're like me, the first time you went looking for a problem in a window procedure you set a break point on the first line of code in the procedure and started stepping through the



## CODE CACHE

function. After a while you noticed that you've been cranking through the debugger for a long time, and yet the messages keep coming. Window procedures receive an enormous number of messages, the vast majority of which are of absolutely no interest to you. Stepping through each one is impractical and generally a waste of time.

The key to effective message debugging is determining which message you're interested in and setting a breakpoint only on the code that handles that message. Of course, with the hundreds of messages PM uses, determining the precise message to trap can be a difficult proposition. Sometimes the appropriate message can be deduced by looking at the named constants in the PM header files. Other times you'll just have to sleuth it out.

To aid your investigation, you should look for free and/or shareware tools that monitor and examine the messages sent to a window. One helpful tool, PMSPY, can be downloaded from a number of bulletin boards. Ironically, PMSPY was originally produced by Microsoft. It has become somewhat outdated because it cannot recognize some of the new messages added in OS/2 2.0 and

later. Nevertheless, PMSPY remains quite serviceable and easy to use. I'm uncertain as to its copyright status since it carries a Microsoft copyright notice, but I presume its availability on numerous bulletin boards indicates that Microsoft has allowed it to become freeware.

If you prefer a more-up-to-date and far more functional utility, consider BugAlert, a shareware utility available on several bulletin boards such as the OS/2 Shareware BBS (703-385-4325). Like PMSPY, BugAlert monitors information from open windows; however, it will also work with a PM debugger such as IPMD. When necessary, your debugger can be started directly from within BugAlert. When used with a debugger, BugAlert can display information from window handles and set breakpoints in the window procedures associated with those handles. Though not quite as robust as its author claims, BugAlert is nevertheless a unique and useful tool.

Another common problem unique to debugging PM applications is the infinite screen painting induced by the debugging activity itself. Most problems occur when your application's win-

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dow overlaps the debugger's window. Every time you bring the debugger's window into focus and then allow the application to execute again, PM will send a sequence of messages to the application's window procedure to repaint the screen.

If you're trying to track the painting logic in your program (or anything related to it), this behavior becomes extremely aggravating. Setting a break point on the WM\_PAINT message will produce an infinite series of break points with almost no intervening delays. In such scenarios, the simplest solution is to rearrange the application and debugger windows so that they don't overlap. If that's not possible, set a breakpoint on some other message you can easily trigger at will (the WM\_SIZE message is a good choice), and then disable the breakpoint on the WM\_PAINT message. When you're ready to trace the WM\_PAINT message, click the sizing border with the mouse. This will trigger your WM\_SIZE breakpoint, and you can then re-enable the breakpoint on the WM\_PAINT message. This method of choosing convenient trigger points works equally well with other messages and is a handy technique to remember.

## Using Exception Handling

Ignoring for the moment the subject of structured exception handling and the exception handling classes available in the User Interface Class Library (because they warrant an entirely separate article), OS/2's basic exception handling functions also provide powerful debugging tools. In the November 1994 Code Cache, we examined the basics of exception handling. Although user-defined exceptions were described, the article barely hinted at their usefulness as debugging tools.

If you have ever used the ANSI `assert()` function, you already realize that it provides an extremely simple sanity checking mechanism. The `assert()` function looks like this: `assert(condition)`, in which `condition` is any expression that evaluates to zero or non-zero. For example, you can check for a null pointer by writing `assert(p != 0)`. If `p` is non-zero, nothing happens, but if `p` is zero, the `assert()` function will print an error message on `stderr` and terminate the application. Since `assert()` is actually a macro, its expansion can be controlled at compile time by a named constant. Defining the constant `NDEBUG` will cause the `assert()` macro



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to expand to nothing, thus allowing you to easily remove it when compiling non-debug versions of the program.

The `assert()` macro is useful in any program (in a PM program you'll have to redirect `stderr` to a file), but it provides extremely limited capabilities for examining the error at run time. Trapping the errors for examination at run time would require breakpoints on every `assert()`, and setting those breakpoints presents a daunting task.

As a more powerful alternative you can write a custom version of the `assert()` macro utilizing OS/2 exception handling. Model your macro after the compiler's `assert()` macro (found in `assert.h`), but replace the action to take on a false condition with a call to `DosRaiseException()`. Within your exception handler, you can obtain the name of the module in which the exception occurred using the undocumented OS/2 function `DosQueryModFromEIP()`.

With the address at which the exception occurred and the linker's map file in hand, you can trace precisely which module and which function caused the exception. This is true whether it's your own user-defined exception or a system exception (such as a protection violation). You can use this powerful technique to track down protection violations in system and third-party DLLs. Furthermore, you can install `assert()` style error checking in PM programs and have all context information available at run time when an error is detected.

Listing 1 shows a prototype for the `DosQueryModFromEIP()` function and an example usage. `DosQueryModFromEIP()` returns the module name and handle when given any valid code address. No prototype is provided for `DosQueryModFromEIP()` in the OS/2 Toolkit header files, so you must copy the prototype listed here and place it in your source files. Note that the name returned is the module name in which the exception occurred, not the file name of the EXE or DLL.

If you need the fully qualified file name of the module, you can pass the module handle to `DosQueryModuleName()`. Using the address at which the exception occurred and the map file generated by the linker, you can then determine the specific function in which the exception occurred. Note also that `DosQueryModFromEIP()` returns an object number in the second parameter. In 32 bit code, this parameter is of little interest; however, in 16 bit code this number specifies the segment value shown in the linker's map file. Depending on the linker you're using, you may have to adjust the origin of this number since `DosQueryMod-`

`FromEIP()` returns a zero-based value and some linkers show 1-based values.

Of course, the most useful debugging trick is prevention. But few of us have the skill or foresight to prevent every twist of logic that can lead a program astray. By honing your skills and adding a few new tricks and tools to your repertoire, you can ease some of the tedium and aggravation associated with debugging. Then you can move onto newer code (and newer bugs). ♦

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### LISTING 1

```
APIRET APIENTRY DosQueryModFromEIP
(HMODULE      *Module,

ULONG      *ObjectNum,

ULONG      BuffLen,

char      *Buff,

ULONG      *Offset,

void      *Address);

// Exception Handler Fragment:

ULONG ExceptionHandler(EXCEPTIONREPORTRECORD
*pRepRec,
                                EXCEPTIONREGISTRATIONRECORD
*pRegRec,
                                CONTEXTRECORD *pContext,
                                void *pDispatcherContext)
{
    HMODULE hModule;
    ULONG   ObjectNum,
           Offset;
    char    Buff[129];

    // Get the name of the module in which the
    // exception occurred

    APIRET rc = DosQueryModFromEIP(&hModule,
                                   &ObjectNum,
                                   sizeof(Buff),
                                   Buff,
                                   &Offset,
                                   pRepRec->ExceptionAddress);
```



# YOUR OS/2 WARP VERSION 3 CONSULTANT SECOND EDITION

by Herb Tyson, Sams Publishing, 611 pages, \$25.00

REVIEWED BY MERRILL R. (RICK) CHAPMAN

**Y**our *OS/2 Warp Version 3 Consultant* is the second edition of Herb Tyson's popular *Your OS/2. 2.1 Consultant*. (We're clearly suffering from title creep here, so for the sake of brevity, we'll drop "Version 3" for the remainder of this review.) This may not be the first OS/2 book you should have in your library, but it is probably the second. Running over 600 pages, this book is not intended to replace or supplement the basic Warp documentation, but rather to provide an in-depth look under the OS/2 hood. If you are a power user, consultant, or perhaps a corporate administrator, this book is a must. From a personal perspective, I use it as my primary reference when adjusting my desktop.

*Your OS/2 Warp Consultant* takes an unabashedly OS/2-centric view of the world. In line with this philosophy, the discussions of DOS and WIN-OS/2, though substantial, are saved for later in the book. The book spends little time tutoring the newcomer on OS/2 basics. For example, in chapter one, the first subject discussed is how to set up an alternate view of the desktop so that it comes to the foreground when clicked on. This may be heady stuff for the user seeking to explore new horizons, but it can be befuddling to the novice.

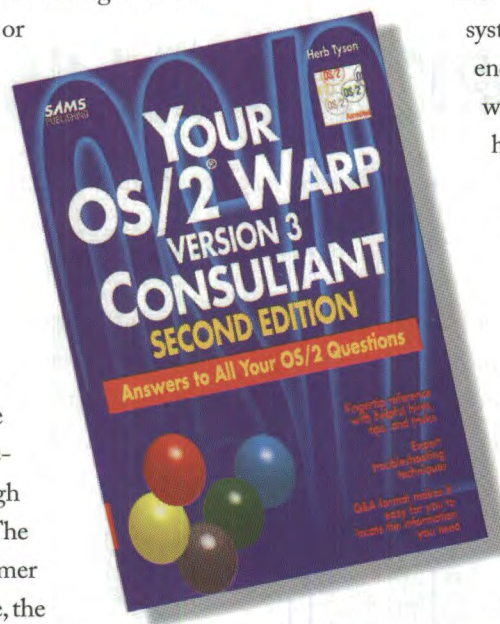
The basic structure of *Your OS/2 Warp Consultant* is fairly conventional. The first few chapters discuss desktop navigation, notebook settings, the LaunchPad, and system setup. The notebook settings section is particularly well done and comprehensive, and should be read carefully by anyone who wants to exploit OS/2's object orientation. Next comes an extensively reworked section on the applets, utilities, and the BonusPak, as well as a section on Warp's multimedia tools.

The multimedia section, while useful, is by no means comprehensive. Given the current complex nature of multimedia and the plethora of competing "standards," a dedicated book on the subject really is necessary. However, a more detailed discussion on IRQ, port, and IO address questions, as well as a listing of the standard assignment used by ISA systems, would have been useful. In my experience, many of the problems users experience with sound and multimedia can be traced to hardware conflicts.

The next sections of the book discuss the OS/2 command line, DOS and WIN-OS/2 sessions, drive and filing objects, communications, printing, and troubleshooting. These sections are all loaded with useful information. The DOS and WIN-OS/2 session was particularly helpful in solving some performance and application problems I've encountered.

While the book's overall structure is conventional, internally *Your OS/2 Warp Consultant* uses a fairly unconventional question and answer format. Practically every section in the book begins with a "How can I...," "Why Can't I...," or "Why Does OS/2..." query. When I first encountered this format in the original book, I found it unusual, but now I'm a fan. This approach makes it easy to quickly "drill down" to key information. It particularly fits the needs of the advanced user, corporate consultant, or support representative.

The Q&A format also makes it easy to integrate Warp's new feature set into the update without slighting important 2.1 information. The book, therefore, is a useful tool for managing a mixed 2.1 and Warp environment. Visually, the book's typography and layout are functional and easy on the eyes. It makes intelligent use of sidebars and call-outs to direct the reader's attention to key





## BOOKSTAX

information without recourse to those annoying, cutesy icons currently the rage in computer books. Tyson's writing style is irreverent and breezy without being condescending (hey, we're power users here!). The book's 8-1/2" by 5-1/2" size also fits easily on a crowded desk or in a briefcase.

Caveats? A few. One surprising weakness is the lack of information on using removable media, including magneto optical, WORM, and drives based on Bernoulli or SyQuest technology. OS/2's current lack of support for these media is annoying to a small but vocal and growing number of OS/2 users. More coverage on this issue clearly is needed.

The book is also sketchy on information about changing OS/2 display modes (also a failing of the first edition). OS/2 2.1 and Warp's methods of changing display modes are difficult and unin-

tuitive and more comprehensive coverage would have been appreciated. A more thorough examination of those infamous, copious, and cryptic "OS/2!! SYS" errors (though the book covers a few of the most common ones) would also have been helpful.

Despite these criticisms, *Your OS/2 Warp Consultant's* combination of clear writing, quality information, format, and extensive scope make it a winner. And, it's reasonably priced. I strongly recommend it. ♦

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Merrill R. (Rick) Chapman is president of Aegis Resources, a software marketing consulting firm. He is also the author of *The Product Marketing Handbook*, a marketing guide for software publishers, and the coauthor of the Software Publishers Association's *U.S. Software Channel Marketing*.

# NETWORK DESIGN ESSENTIALS

by Ed Tittel and Margaret Robbins, AP Professional, 282 pages, \$24.95

REVIEWED BY KEN MACKIN

**F**or a seasoned professional to evaluate a book written for beginners is tough. The experience that makes one an expert points up all the holes in almost everything that's written for the novice—holes that can be filled only by experience. In addition, a book written for a beginner often bows to conventional wisdom, resulting in text that explains the way things are done by most people, not necessarily the best people. *Network Design Essentials* is such a book.

That's not to say it's a bad book. But it isn't organized for maximum effect. From where I sit, a book on network design essentials ought to begin with an analysis of the business, the processes by which it produces revenue, and the costs associated with each unit of work. In this way, the reader can learn what can be done, and what the potential benefits might be.

Then there's the authors' seeming confusion about who the audience is. Is it for people who want to network a company? Is

it for standalones who just want to understand it? The difference is crucial. Anyone who attempts to network an office after only reading this book would be doomed to fail. Would you let someone operate on your brain after a weekend course in neurosurgery?

Even a network as "simple" as a five-node Microsoft Windows for Workgroups installation can sometimes be a major pain to set up. I know a very technically aware president of a software company who spent the better part of two weeks trying to kickstart WfW before the issues were resolved. And that's just a two-node peer-to-peer net.

To network effectively, you need to understand business from a process point of view. Once you do, you can begin to analyze how and where networking would be most effective. Then you would consider what applications you are going to run and what end user services you are going to provide.

*Network Design Essentials* starts out sounding like it was writ-





## BOOKSTAX

ten for people who only recently learned how to spell PC. These people should not be encouraged to rush off and network. To avoid a lot of anguish, they need to take their time and learn the standalone ropes first. The authors work too hard to make it all sound so easy—it's a bummer when well-meaning and intelligent people say things like, "Hey, quantum mechanics isn't as difficult as it sounds."

Its "networking is really easy" tone makes a mockery of the careers of thousands of networking professionals who work at it every day. The best advice for networking an office of more than just a few nodes is to get help: hire a consultant, find a reputable reseller. But by all means, read a lot more than what you get here. Networking can turn ugly—even for people who were around when Novell was just a startup.

This book will not prepare you to do anything more than understand many of the concepts underlying networking. It will give you a basic idea of who you'll need to talk to, but it won't be of any help in making choices about what operating systems to use, cable plant, topology, equipment choice, or telecommunications. This would all be OK if the authors made it clear what their book wouldn't do for you—but they don't.

The case study section toward the end intrigued me and then failed to deliver. There are three studies: small, medium, and large. It would have been better to have a section entitled "What Not to Do and Why."

The absence of discussion about choosing resellers and consultants (and how to get the most out of them) is all the more curious in light of the fact that one of the book's authors is director of corporate marketing at Novell. *Network Design Essentials* mentions the word reseller only once, in a section entitled "Keep an Expert on Tap." My advice? By all means educate yourself, but don't fool yourself into believing that book smart equals capable. Find somebody good, pay for their time, and you'll get better results. ♦

Ken Mackin is a contributing writer for OS/2 Professional. He can be reached on CompuServe at 76004,3626.

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# The Devil in the Details

BY JERRY POURNELLE

I like my stories to have a happy ending, so I've put off writing about Warp. Alas, it's deadline time and Warp still won't run on any machine at Chaos Manor. Sigh. I did want to talk about Warp and the Internet.

The last time I castigated IBM for not making it easier to install OS/2, the official reply was that most users would be getting OS/2 pre-installed on their machines, and thus wouldn't have installation problems. As to drivers, well, that really wasn't IBM's problem—if you use IBM or IBM approved equipment you won't have driver problems.

Well, that isn't true: Warp won't install properly on an IBM PS/2 Model 77. I can and do run OS/2 2.11 on the PS/2, and it works just fine—CD-ROM, Sound Blaster, Ethernet, and all; but it won't Warp, and no one seems to know when, or if, there will be a Warp for Microchannel systems. So it goes.

Eventually IBM will see to it that OS/2 runs on all IBM equipment, just as it's only a matter of time before there's a PowerPC version of OS/2. The driver problem is a little stickier: IBM must encourage hardware vendors to write OS/2 drivers for CD-ROM controllers; sound boards; PCMCIA systems including modems, optical disk drives, tape backup units, digital audio tape drives, various network boards; and all the myriad peripherals that make PCs so interesting while driving software developers crazy. But how? All but the wealthiest peripheral developers must be very careful in allocating their programmer resources.

Developing for OS/2 is a gamble: on the one hand there's not very much competition, but on the other the entire market isn't all that large. And, until users can be pretty sure they won't have to do without their favorite peripherals, they're going to be reluc-

tant to choose OS/2. Meanwhile, IBM certainly wants to sell OS/2 pre-installed on IBM PCs, but how badly do they want to do it?

A recent *Wall Street Journal* article tells us that Microsoft is playing hard ball again. The bundling cost of Windows 95 depends enormously on just how many units you contract for, with deep discounts if you order a lot. This isn't quite the same thing as a contract that makes you pay for Windows whether you ship it or not, but it's close.

It also puts the IBM micro hardware divisions in the same dilemma as every other computer company. Suppose OS/2 is wildly successful, and a full one-third of all buyers want OS/2 preinstalled? That still leaves twice as many who want Windows 95. Since Microsoft knows this too, you can bet that Microsoft's pricing and discounting policies will make that expensive. IBM corporate may force their hardware people to take the hit in order to boost OS/2. But will anyone else? It seems to me that the real sales of OS/2 preinstalled will

come after IBM has gained market share. Getting that market share requires selling OS/2 as an after-market improvement to your Windows PC.

Which puts us back to marketing to end users; users who already have a working computer, and who won't see it as an improvement if they have to give up their peripherals. I grant you that OS/2 may be worth doing that, just as it may be worth investing hours and hours in getting it running, but for every user who'll buy OS/2 despite its limitations and installation problems, there have to be many more who won't bother.

The devil, they say, is in the details; in this case, installation and drivers. And I'm not at all sure IBM knows that. ♦





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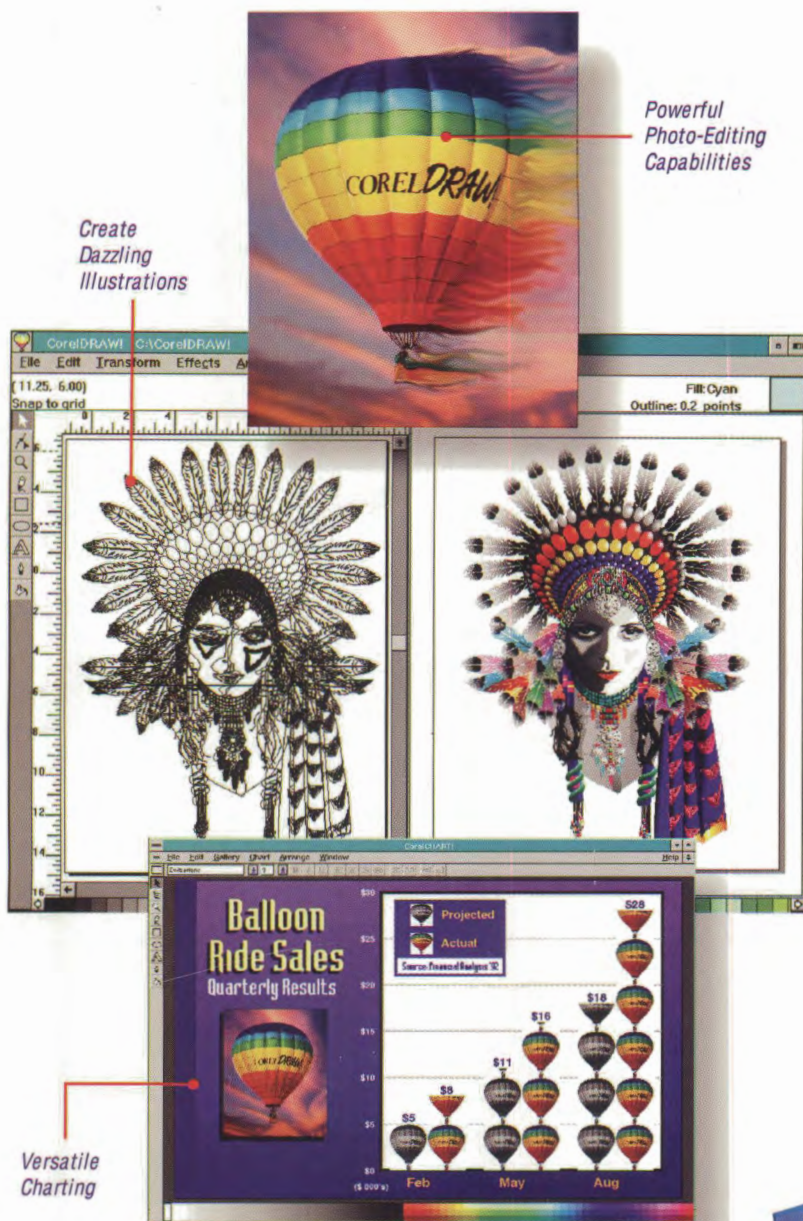
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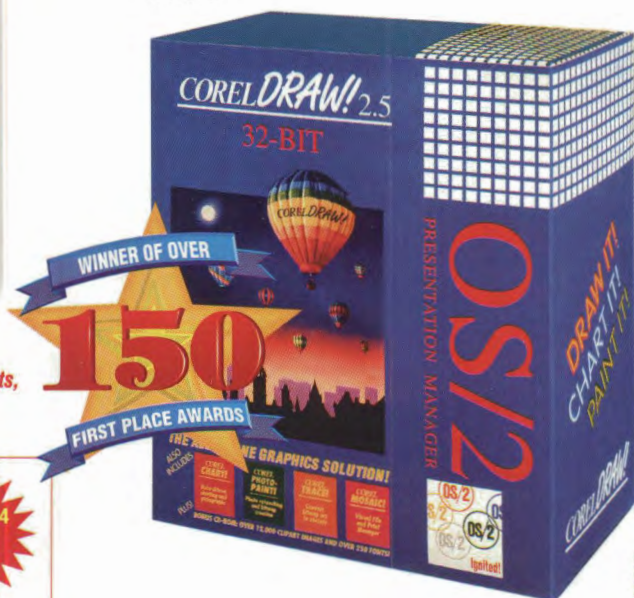
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